Access DB# 99851

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Carrie S. Thompson Examiner #: 79214 Date: July 25, 2003
Art Unit: 1774 Phone Number 30 54488 Serial Number: 10/077393
Mail Box and Bldg/Room Location: CP3/11B28 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Multilayer w/ spacers, touchscreen

Inventors (please provide full names): Charles C. Anderson; Ronald S. Cok; Rodney D. Feldman

Earliest Priority Filing Date: 2/15/2002

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please do a search on claims 1-41 with formulas included.

Thanks.

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STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: EA	NA Sequence (#)		STN	$ 274.38
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	✓ (1)	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	✓ (and)	Dr.Link	
Date Completed: 7-30-03	Litigation		Lexis/Nexis	
Searcher Prep & Review Time: 20	Fulltext		Sequence Systems	
~~Clerical Prep Time:~~	Patent Family		WWW/Internet	
Online Time: 130	Other		Other (specify)	

PTO-1590 (8-01)

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FILE 'REGISTRY' ENTERED AT 12:36:51 ON 30 JUL 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> display history full l1-


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L1               STR

     FILE 'REGISTRY' ENTERED AT 10:51:22 ON 30 JUL 2003
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L3            18 SEA SSS SAM L1 AND L2
L4           352 SEA SSS FUL L1 AND L2
                 SAV L4 THO393/A

     FILE 'LCA' ENTERED AT 11:05:01 ON 30 JUL 2003
L5          7647 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
                 OVERLAID? OR LAMIN? OR LAMEL? OR SHEET? OR LEAF? OR
                 FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR
                 SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR
                 OVERSPREAD?)/BI,AB

     FILE 'HCA' ENTERED AT 11:14:16 ON 30 JUL 2003
L6        357921 SEA LAMIN? OR LAMEL? OR MULTILAYER? OR MULTICOAT? OR
                 MULTIFILM? OR (MULTI OR MULTIPL? OR PLURAL? OR NUMEROUS?
                 OR MANY OR MULTITUD? OR MANIFOLD? OR MULTIFOLD? OR
                 SEVERAL OR FEW)(2A)(L5 OR CLAD?)
L7           1487 SEA L4
L8          77835 SEA (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO
                 OR ORG#)(2A)LUM!N? OR LIGHT?(2A)(EMIT? OR EMISSION?) OR
                 EL OR E(W)L OR L(W)E(W)D OR OLED)/BI,AB OR LED/IT
L9          40019 SEA OLED OR O(W)L(W)E(W)D OR TOUCHSCREEN? OR TOUCHPANEL?
                 OR TOUCHDISPLAY? OR TOUCH?(2A)(SCREEN? OR PANEL? OR
                 DISPLAY?) OR DISPLAY?(2A)(DEVICE? OR EQUIP? OR APPARAT?
                 OR APP## OR ASSEMBLY OR ASSEMBLIES OR SCREEN? OR PANEL?
                 OR MONITOR?) OR CRT OR C(W)R(W)T OR CATHOD##(2A)RAY#(2A)T
                 UBE#
L10           169 SEA L7 AND L6
L11            72 SEA L10 AND L8
L12            20 SEA L10 AND L9
L13           447 SEA TOUCHSCREEN? OR TOUCHPANEL? OR TOUCHDISPLAY? OR
                 TOUCH?(2A)(SCREEN? OR PANEL? OR DISPLAY?)
L14             2 SEA L7 AND L13
L15             1 SEA L10 AND SPACER#

     FILE 'LCA' ENTERED AT 11:30:05 ON 30 JUL 2003
L16           110 SEA SPINCOAT? OR WEBCOAT? OR SPRAYCOAT? OR ELECTROCOAT?
                 OR (SPIN? OR SPUN? OR WEB OR WEBS OR WEBBED OR WEBBING#
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                OR SPRAY? OR ELECTRO#)(2A)COAT?
L17          53 SEA MICROSPHER? OR MICROBALL# OR MICROGLOB? OR NANOSPHER?
                 OR NANOBALL# OR MICROBALL? OR NANOSPHER? OR NANOBALL#
                OR NANOGLOB? OR (MICRO OR NANO)(2A)(SPHER? OR BALL# OR
                GLOB?)
L18         120 SEA ENCAPSUL? OR MICROENCAPSUL? OR MICROCAPSUL? OR
                CAPSULAT? OR NANOENCAPSULAT? OR NANOCAPSUL?

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L19          11 SEA L10 AND L16
L20           0 SEA L10 AND L17
L21           1 SEA L10 AND L18
L22           7 SEA L7 AND SPACER#
L23          16 SEA L11 AND L12
L24          10 SEA L14 OR L15 OR L21 OR L22
L25          24 SEA (L19 OR L23) NOT L24
L26           4 SEA L12 NOT (L24 OR L25)
L27          28 SEA (L19 OR L23 OR L12) NOT L24
L28          49 SEA L11 NOT (L24 OR L27)
                E COATING PROCESS/CV
L29      105160 SEA "COATING PROCESS"/CV
                E COATING MATERIALS/CV
L30      235874 SEA "COATING MATERIALS"/CV
L31           1 SEA L28 AND (L29 OR L30)
L32          29 SEA L27 OR L31
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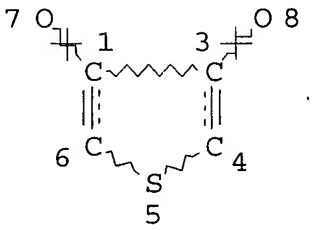


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NODE ATTRIBUTES:
CONNECT IS E2  RC AT   5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7
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STEREO ATTRIBUTES: NONE
L2 SCR 2043
L4 352 SEA FILE=REGISTRY SSS FUL L1 AND L2

100.0% PROCESSED 4090 ITERATIONS 352 ANSWERS
SEARCH TIME: 00.00.01

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FILE 'HCA' ENTERED AT 12:38:44 ON 30 JUL 2003

=> d l24 1-10 cbib abs hitstr hitind

L24 ANSWER 1 OF 10 HCA COPYRIGHT 2003 ACS on STN
139:45127 Material for making a conductive pattern. Lamotte, Johan; Louwet, Frank; Cloots, Tom; Van Aert, Huub (Agfa-Gevaert, Belg.). PCT Int. Appl. WO 2003050824 A1 20030619, 47 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-EP13159 20021122. PRIORITY: EP 2001-739 20011211.

AB A material contg. an intrinsic conducting polymer for making a conductor pattern without the use of hazardous materials. A material for making a conductive pattern, the material comprising a support and a heat-differentiable element, the heat-differentiable element comprising an outermost layer contg. a polyanion and an intrinsically conductive polymer and optionally a 2nd layer contiguous with the outermost layer, characterized in that the outermost layer and/or the optional 2nd layer contains hydrophobic thermocoagulable latex particles in a wt. ratio range with respect to the intrinsically conductive polymer in the range of 20:1 to 1:5. The hydrophobic thermocoagulable latex particles are capable upon heating of increasing the cond. of the heated parts of the outermost layer relative to the unheated parts of the outermost layer and/or changing the removability of the heated parts of the outermost layer relative to the unheated parts of the outermost layer and the heat-differentiable element does not comprise a di- or polyhydroxy org. compd. or an aprotic compd. with a dielec. const. .gtoreq. 15; a method of making a conductive pattern on a support therewith; and a use of the material for making a conductive pattern in making an

electronic circuit in the prodn. of an elec. or semiconductor device such as a printed circuit board, an integrated circuit, a **display** or **touch screen**, an electroluminescent device or a photovoltaic cell.

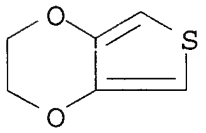
IT **126213-51-2P**, PEDOT
(material contg. intrinsic conducting polymer for making conductor pattern without use of hazardous materials)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01B001-12

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 74

IT **126213-51-2P**, PEDOT
(material contg. intrinsic conducting polymer for making conductor pattern without use of hazardous materials)

L24 ANSWER 2 OF 10 HCA COPYRIGHT 2003 ACS on STN

138:212615 Method for manufacturing low cost electroluminescent (EL) illuminated membrane switches. Stevenson, William C.; Lau, James L. (Novatech Electroluminescent, Inc., USA). U.S. Pat. Appl. Publ. US 2003041443 A1 20030306, 19 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-942339 20010830.

AB A method of fabricating low cost electroluminescent (EL) illuminated membrane switches is described that entails die cutting, embossing or chem. etching the metal foil surface of a metal foil bonded, light transmitting flexible elec. insulation to simultaneously form .gtoreq.1 front capacitive electrodes, membrane switch contacts and elec. shunt, elec. distribution means and elec. terminations that together comprise a flexible printed circuit panel, coupling the circuit substrate to a precisely positioned indexing system, coating the front metal foil capacitive electrodes with a light transmissive elec. conductive layer, applying a layer of electroluminescent phosphor to the elec. conductive layer, applying a layer of capacitive dielec. layer to the phosphor layer, applying a rear capacitive electrode over the capacitive dielec. layer, thus forming an electroluminescent lamp portion, applying a transparent dielec. coating to the entire surface of the lamp and substrate with open portions exposing elec. terminations, switch contacts and shunt, applying a **spacer** to surround the switch shunt, providing

an isolation barrier, and applying an intermediary material to the surface of the isolated rear EL electrode thus forming a switch actuator. Finally, the illuminated switch pattern is die-cut from the substrate material, and is then folded into 3 layers forming the final illuminated membrane switch.

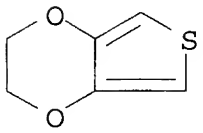
IT **126213-51-2**, PEDOT
(light transmissive electrode; method of fabricating electroluminescent membrane switches)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-10
ICS H05K003-10; H01B013-00

NCL 029622000; 216005000; 216013000; 216024000; 438099000; 029847000; 029846000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT **126213-51-2**, PEDOT
(light transmissive electrode; method of fabricating electroluminescent membrane switches)

L24 ANSWER 3 OF 10 HCA COPYRIGHT 2003 ACS on STN

138:97572 Electroluminescence properties of an alternating blue-green light-emitting copolymer consisting of soft and rigid segments. Wang, Hai-qiao; Li, Xiao-yu (The Key Lab. Sci. Technology Controllable Chem. Reactions, Ministry Education, Sch. Materials Sci. Eng., Beijing Univ. Chemical Technology, Beijing, 100029, Peop. Rep. China). Gongneng Gaofenzi Xuebao, 15(3), 276-280 (Chinese) 2002. CODEN: GGXUEH. ISSN: 1004-9843. Publisher: Gongneng Gaofenzi Xuebao Bianjibu.

AB A blue-green light-emitting copolymer (TEO-NV) contg. alternating 1,5-(3,5-dimethyloxy styrene) naphthalene as chromophore and tri(ethylene oxide) as functional **spacer**, was synthesized. Its chem. structure was characterized and luminescent properties was investigated. Thermal properties were measured with DSC and TGA under nitrogen atm. TEO-NV has excellent thermal stability and the decompn. temp. is high up to 409 .degree.C with Tg = 42 .degree.C. TEO-NV can be sol. in many org. solvents, such as chloroform, methylene dichloride and toluene, and the polymer soln. can be

spin-coated onto various substrates giving highly transparent and homogeneous thin film. TEO-NV is a typical blue-green light-emitting copolymer with a max. EL emitting peaks at 499 nm. A light-emitting diode (LED) based on TEO-NV was successfully fabricated. Its threshold voltage was ca. 5 V for light emission, and the max. brightness was 295 cd/m2 at forward bias 20 V.

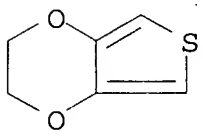
IT **126213-51-2**
(for electroluminescent devices made of alternating blue-green light-emitting copolymer consisting of soft and rigid segments)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50851-57-5 50926-11-9, Indium tin oxide **126213-51-2**
(for electroluminescent devices made of alternating blue-green light-emitting copolymer consisting of soft and rigid segments)

L24 ANSWER 4 OF 10 HCA COPYRIGHT 2003 ACS on STN

137:279555 A luminescent copolymer containing PPV-based chromophores and flexible tri(ethylene oxide) **spacers**. Wang, Haiqiao; Sun, Qingjiang; Li, Yongfang; Liu, Deshan; Wang, Xiaogong; Li, Xiaoyu (The Key Laboratory of Science and Technology of Controllable Chemical Reactions, School of Materials Science and Engineering, Ministry of Education, Beijing University of Chemical Technology, Beijing, 100029, Peop. Rep. China). Reactive & Functional Polymers, 52(2), 61-69 (English) 2002. CODEN: RFPOF6. ISSN: 1381-5148. Publisher: Elsevier Science B.V..

AB A luminescent triethylene oxide-phenylene vinylene block copolymer (TEO-MPV) was synthesized through Wittig polycondensation reaction. The structure of the copolymer was verified using FTIR, 1H NMR, and elemental anal. The electrochem. properties of the copolymer were evaluated and the HOMO and LUMO energy levels of the copolymer were estd. by cyclic voltammetry. Thermal anal. showed that the glass transition temp. (Tg) of the copolymer is about 85.6.degree. and the decompn. temp. is over 384.degree.. The fluorescence quantum yield of TEO-MPV chloroform soln. reaches 99.05%, much higher than that of analogous polymers and has greenish-blue emission. An

ITO/TEO-MPV/Al single layer LED assembly , ITO/PEDOT-PSS/TEO-MPV/Ca (Al) bilayer LED, and a light-emitting electrochem. cell (LEC) were fabricated. The LEC devices have lower turn-on and operating voltage than corresponding LED devices.

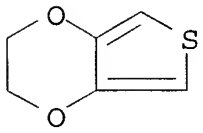
IT **126213-51-2**, PEDOT
(carrier layer; Wittig polycondensation in prepn. of luminescent poly(phenylene vinylene-ethylene oxide) and electrochem. and luminescence and performance as emitter layer in devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 73

IT 9003-53-6D, Polystyrene, sulfonated **126213-51-2**, PEDOT
(carrier layer; Wittig polycondensation in prepn. of luminescent poly(phenylene vinylene-ethylene oxide) and electrochem. and luminescence and performance as emitter layer in devices)

L24 ANSWER 5 OF 10 HCA COPYRIGHT 2003 ACS on STN

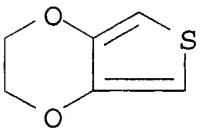
137:239513 Polymer organic light emitting device with improved color control. Roitman, Daniel B.; Antoniadis, Homer (Agilent Technologies, Inc., USA). Eur. Pat. Appl. EP 1244153 A2 20020925, 7 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-130337 20011219. PRIORITY: US 2001-814381 20010321.

AB An org. light emitting device (OLED) for emitting light at a predetd. wavelength is described comprising an anode; a cathode layer; an electroluminescent layer comprising an org. light emitting compd. for generating light including light of the predetd. wavelength by the recombination of holes and electrons, the electroluminescent layer being located between the anode and cathode and being connected to them; and a first and a second reflector, the second reflector being partially reflecting and being displaced from the first reflector, such that the optical path length between the first and second reflectors is D; a **spacer** layer comprising a material that is transparent at .lambda., wherein D = N.lambda./2 (N = pos. integer). The **spacer** may include a hole transport material located between the electroluminescent layer and the anode layer.

IT **126213-51-2**, PEDOT
(light emitting layer; polymer org. light emitting device with improved color control)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01L051-20
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
ST org light emitting device color control **spacer** layer
IT **126213-51-2**, PEDOT
(light emitting layer; polymer org. light emitting device with improved color control)

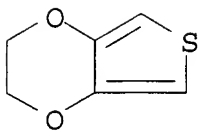
L24 ANSWER 6 OF 10 HCA COPYRIGHT 2003 ACS on STN
137:171129 Antisoiling hardcoats containing inorganic oxides and perfluoropolyethers. Liu, Junkang J.; Fong, Bettie C.; Kluge, Bruce D. (USA). U.S. Pat. Appl. Publ. US 2002114934 A1 20020822, 20 pp., Cont.-in-part of U.S. Ser. No. 633,835. (English). CODEN: USXXCO. APPLICATION: US 2001-923749 20010807. PRIORITY: US 2000-633835 20000807.
AB An antisoiling hardcoated film comprises a substantially transparent substrate, a hardcoat layer comprising inorg. oxide particles dispersed in a binder matrix, and an antisoiling layer comprising a perfluoropolyether. The antisoiling layer can be very thin, thus reducing the cost of the perfluoropolyether. The film has very good scratch, smudge and glare resistance and very good interlayer adhesion and durability. The film can be in the form of a single flexible substrate or a stack of such substrates. The film or stack can be sized to fit the display screen of an electronic display device such as a personal digital assistant or cell phone.
IT **155090-83-8**, BAYTRON P
(antisoiling hardcoats contg. inorg. oxides and perfluoropolyethers)
RN 155090-83-8 HCA
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

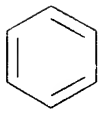


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

IC ICM B32B003-00
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NCL 428212000
CC 42-10 (Coatings, Inks, and Related Products)
IT Optical imaging devices
(**touch**-sensitive **screen**; antisoiling hardcoats contg. inorg. oxides and perfluoropolyethers)

IT **155090-83-8**, BAYTRON P
(antisoiling hardcoats contg. inorg. oxides and perfluoropolyethers)

L24 ANSWER 7 OF 10 HCA COPYRIGHT 2003 ACS on STN
136:94638 Making **encapsulated** organic electronic devices.
McCormick, Fred B.; Baude, Paul F.; Vernstrom, George D. (3M Innovative Properties Company, USA). PCT Int. Appl. WO 2002005361 A1 20020117, 33 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US31393 20001115. PRIORITY: US 2000-614993 20000712.

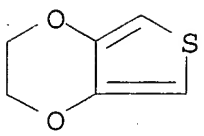
AB The invention provides methods for making **encapsulated** org. electronic devices (OED) including org. LEDs (OLED). The present invention can provide a robust OED device by means of in situ edge sealing enhancing structural integrity and device lifetime. The edge sealing is provided by using an adhesive component applied to a substrate prior to OED element deposition. A thin layer of an adhesive (pressure sensitive adhesive, hot melt, or curable) is applied to release liner, openings are cut in the adhesive/liner composite, then the composite is adhered to an electrode-coated substrate. Alternatively, an adhesive may be applied directly onto the electrode-coated substate, e.g., by printing in a desired pattern, optionally partially cured or dried, then covered with .gtoreq.1 liners that act as a mask during deposition of the OLED elements. Another method would be to prep. a blank liner with a patterned adhesive, then die cut openings complementary to the adhesive pattern in the liner to allow deposition of OLED elements once the adhesive/liner is placed on the substrate.

IT **126213-51-2**, Poly(ethylenedioxythiophene)
(conductive polymer in light emitting construction; making **encapsulated** org. electronic devices)

RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01L051-20
ICS H01L051-40; H05B033-04
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 38
ST **encapsulated** org electronic device prepn
IT Electron beam evaporation
(alumina layer; making **encapsulated** org. electronic devices)
IT Siloxanes (nonpolymeric)
(coated on metal foil as adhesive-coated liner; making **encapsulated** org. electronic devices)
IT Polyesters, processes
(coated with siloxanes or fluorocarbons as adhesive-coated liner; making **encapsulated** org. electronic devices)
IT Adhesives
(conductive, thermal, elec.; making **encapsulated** org. electronic devices)
IT Adhesives
(curable; making **encapsulated** org. electronic devices)
IT Fluoropolymers, processes
(film as adhesive-coated liner; making **encapsulated** org. electronic devices)
IT Hydrocarbons, processes
(fluoro, coated on metal foil as adhesive-coated liner; making **encapsulated** org. electronic devices)
IT Electric contacts
Electroluminescent devices
Encapsulation
Lamps (nonelectric)
Microelectronic devices
Release coatings
Sealing
Shadow masks
(making **encapsulated** org. electronic devices)
IT Foils
(metal as protective layer; making **encapsulated** org. electronic devices)
IT **Multilayers**
(polymer as protective layer; making **encapsulated** org. electronic devices)
IT Films
(polymeric; making **encapsulated** org. electronic devices)
IT Adhesives
(pressure-sensitive; making **encapsulated** org.

electronic devices)
IT Glass, uses
(thin flexible as protective layer; making **encapsulated** org. electronic devices)
IT 7789-24-4, Lithium fluoride, uses
(LiF/Al cathode; making **encapsulated** org. electronic devices)
IT 9003-07-0, Polypropylene
(adhesive-coated liner; making **encapsulated** org. electronic devices)
IT **126213-51-2**, Poly(ethylenedioxythiophene)
(conductive polymer in light emitting construction; making **encapsulated** org. electronic devices)
IT 1314-13-2, Zinc oxide, uses 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-19-9, Samarium, uses 7440-22-4, Silver, uses 7440-39-3, Barium, uses 7440-57-5, Gold, uses 7440-65-5, Yttrium, uses 7440-70-2, Calcium, uses 50926-11-9, ITO 53740-87-7
(counter electrode; making **encapsulated** org. electronic devices)
IT 1344-28-1, Alumina, processes
(electron beam evapn. on ITO; making **encapsulated** org. electronic devices)
IT 1332-29-2, Tin oxide
(fluorine, counter electrode; making **encapsulated** org. electronic devices)
IT 123847-85-8, .alpha.-NPD
(hole transport layer in light emitting construction; making **encapsulated** org. electronic devices)
IT 147-14-8, Copper phthalocyanine 155306-71-1, C545T
(in light emitting construction; making **encapsulated** org. electronic devices)
IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum
(light emitting layer; making **encapsulated** org. electronic devices)

L24 ANSWER 8 OF 10 HCA COPYRIGHT 2003 ACS on STN
132:140918 Flexible glass substrates and **laminated** light-emitting devices based on this substrate. Krijn, Marcellinus P. C. M.; Dona, Marinus J. J.; Swinkels, Johannes M. M.; Vleggaar, Jeroen J. M. (Koninklijke Philips Electronics N.V., Neth.). PCT Int. Appl. WO 2000005180 A1 20000203, 12 pp. DESIGNATED STATES: W: JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1999-EP4759 19990707. PRIORITY: EP 1998-202421 19980720.
AB The substrate comprises a glass sheet with a thickness .ltoreq.0.1 mm (e.g., 60-80 .mu.m) being provided with a layer of a synthetic resin having a thickness less or equal of the glass sheet thickness. This substrate is flexible and can be bent to a 1 cm curvature radius without fracturing. The light-emitting device comprises a stack of two substrates and **spacers** between them, where the space is filled with a mixt. of inert gas with mercury vapor.

The substrate may be used as flexible light source in (1) light-emitting devices for liq.-crystal displays, such as poly-LED or Plasma Addressed Liq. Crystal displays, and (2) electrochromic devices.

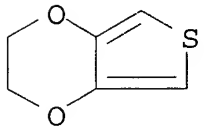
IT **126213-51-2**
(flexible glass substrates and **laminated** light-emitting devices based on this substrate)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM C03C017-32
ICS G02F001-133

CC 57-1 (Ceramics)
Section cross-reference(s): 74

ST flexible **laminated** glass substrate liq crystal display

IT Electrochromic devices
Liquid crystal displays
(flexible glass substrate and **laminated** light-emitting device based on this substrate)

IT Sheet glass
(flexible glass substrate and **laminated** light-emitting device based on this substrate)

IT Noble gases, uses
(mixt. with mercury vapor; flexible glass substrate and **laminated** light-emitting device based on this substrate)

IT Plastics, uses
(polyurethane; flexible glass substrate and **laminated** light-emitting device based on this substrate)

IT 1067-53-4, Z-6082
(adhesive; flexible glass substrates and **laminated** light-emitting devices based on this substrate)

IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses
(component of bonding layer; flexible glass substrates and **laminated** light-emitting devices based on this substrate)

IT 7440-64-4, Ytterbium, uses
(component of cathode layer; flexible glass substrates and **laminated** light-emitting devices based on this substrate)

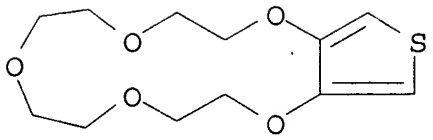
IT 96352-95-3P, NeoRez R-970 154214-68-3P, NeoRez R-972
256949-56-1P, NeoRez R 980
(flexible glass substrates and **laminated** light-emitting

devices based on this substrate)
IT **126213-51-2**
(flexible glass substrates and **laminated** light-emitting devices based on this substrate)
IT 12788-05-5, Indium-tin eutectic
(moisture-proofing layer on the glass; flexible glass substrates and **laminated** light-emitting devices based on this substrate)
IT 138184-36-8, MEH-PPV
(spun layer; flexible glass substrates and **laminated** light-emitting devices based on this substrate)
IT 7439-97-6, Mercury, uses
(vapor, mixt. with inert gas; flexible glass substrates and **laminated** light-emitting devices based on this substrate)

L24 ANSWER 9 OF 10 HCA COPYRIGHT 2003 ACS on STN
131:323230 Synthesis and characterization of oligo- and crown ether-substituted polythiophenes - a comparative study. Scheib, Stefan; Bauerle, Peter (Abteilung Organische Chemie II, Universitat Ulm, Ulm, D-89081, Germany). Journal of Materials Chemistry, 9(9), 2139-2150 (English) 1999. CODEN: JMACEP. ISSN: 0959-9428. Publisher: Royal Society of Chemistry.
AB The synthesis of two series of thiophenes substituted with crown and oligoether groups either via isolating oxaalkyl chains or in direct .pi.-conjugation is described. Electrooxidative polymn. leads to the corresponding crown and oligoether-functionalized polythiophenes. Their electrochem. and spectroscopic properties depend on the length of the **spacer** and the type of the ether unit. The polymers reveal a high mean conjugation. A specific and strong influence of alkali ions on the electrochem. behavior is found for several polymers. The selectivities correspond to the match of the cation size without solvent shell and the inner diam. of the crown ether units. Spectroelectrochem. expts. corroborate that the changes in redox properties are due to a hindered diffusion of the counter anions into the film when the polymer is oxidized. Due to the structural variation novel materials sensitive to different cations are obtained. Importantly, in these conjugated polymers chem. information which corresponds to a selective host-guest interaction of the alkali metal cations and the ether units is transduced into the change of an elec. signal.
IT **163657-78-1P 249513-23-3P**
(prepn. and characterization of)
RN 163657-78-1 HCA
CN Thieno[3,4-b]-1,4,7,10,13-pentaoxacyclopentadecin, 2,3,5,6,8,9,11,12-octahydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

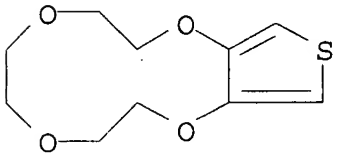
CRN 122372-74-1
CMF C12 H18 O5 S



RN 249513-23-3 HCA
CN Thieno[3,4-b]-1,4,7,10-tetraoxacyclododecin, 2,3,5,6,8,9-hexahydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 122372-73-0
CMF C10 H14 O4 S



CC 37-3 (Plastics Manufacture and Processing)
IT 119889-86-0P 157483-26-6P **163657-78-1P** 249513-18-6P
249513-19-7P 249513-20-0P 249513-21-1P 249513-22-2P
249513-23-3P
(prepn. and characterization of)

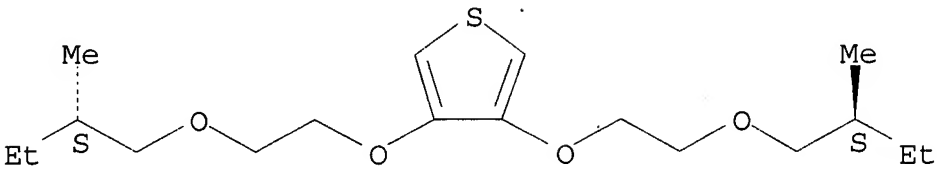
L24 ANSWER 10 OF 10 HCA COPYRIGHT 2003 ACS on STN
129:261150 Odd-even effect in the association of chiral poly(3,4-dialkoxythiophenes). Ramos Lermo, M. E.; Langeveld-Voss, B. M. W.; Meijer, E. W. (Lab. Macromol. and Organic Chem., Eindhoven Univ. Technol., Eindhoven, 5600 MB, Neth.). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 39(2), 1087-1088 (English) 1998. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.
AB Five different poly 3,4-di((S)-2-methylbutyloxy)alkoxythiophenes contg. increasing lengths of alkoxy **spacers** were synthesized by the FeCl3 oxidative polymn. of the corresponding monomer. An odd-even effect is obsd. in the optical activity of the .pi.-.pi.* transition of the backbone in the well-aggregated phases formed in n-decanol. The position of the stereocenter in the side chain affects the helicity of the main chain packing. These results are discussed in terms of a cholesteric packing of the polythiophenes.
IT **213691-73-7 213691-76-0 213691-78-2**
213691-80-6 213691-83-9
(odd-even effect in assocn. of chiral poly(dialkoxythiophenes))
RN 213691-73-7 HCA
CN Thiophene, 3,4-bis[2-[(2S)-2-methylbutoxy]ethoxy]-, stereoisomer,

homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213691-72-6
CMF C18 H32 O4 S

Absolute stereochemistry.

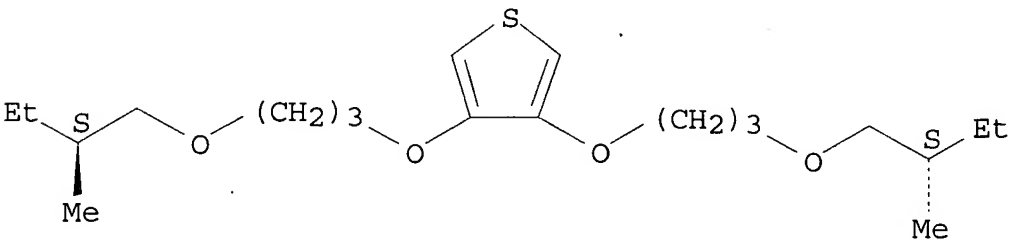


RN 213691-76-0 HCA
CN Thiophene, 3,4-bis[3-[(2S)-2-methylbutoxy]propoxy]-, stereoisomer, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213691-75-9
CMF C20 H36 O4 S

Absolute stereochemistry.

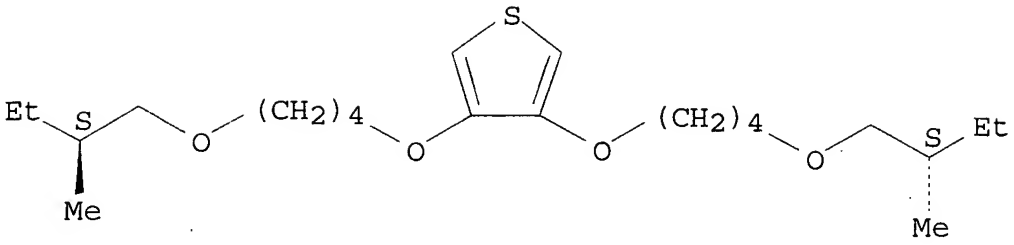


RN 213691-78-2 HCA
CN Thiophene, 3,4-bis[4-[(2S)-2-methylbutoxy]butoxy]-, stereoisomer, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213691-77-1
CMF C22 H40 O4 S

Absolute stereochemistry.

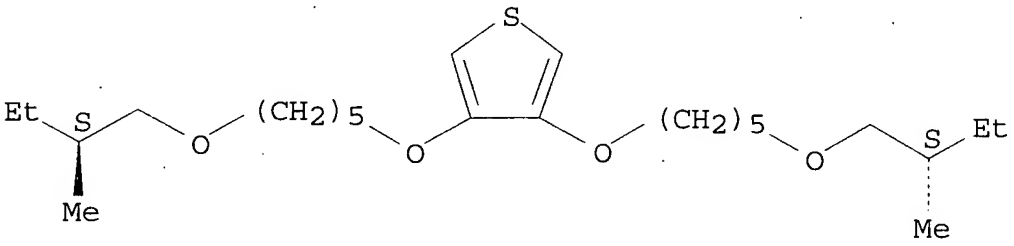


RN 213691-80-6 HCA
CN Thiophene, 3,4-bis[[5-[(2S)-2-methylbutoxy]pentyl]oxy]-, stereoisomer, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213691-79-3
CMF C24 H44 O4 S

Absolute stereochemistry.

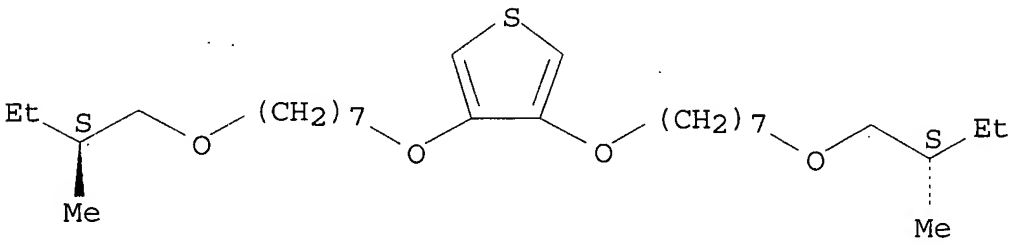


RN 213691-83-9 HCA
CN Thiophene, 3,4-bis[[7-[(2S)-2-methylbutoxy]heptyl]oxy]-, stereoisomer, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 213691-82-8
CMF C28 H52 O4 S

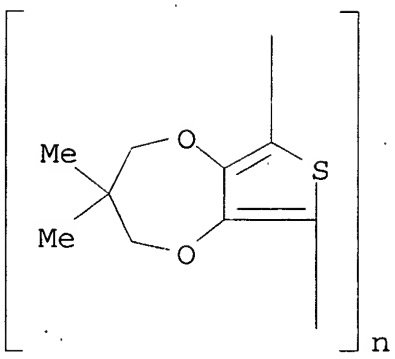
Absolute stereochemistry.



CC 36-6 (Physical Properties of Synthetic High Polymers)
IT **213691-73-7 213691-76-0 213691-78-2**
213691-80-6 213691-83-9
(odd-even effect in assocn. of chiral poly(dialkoxythiophenes))

=> d l32 1-29 cbib abs hitstr hitind

L32 ANSWER 1 OF 29 HCA COPYRIGHT 2003 ACS on STN
139:76218 Enhanced contrast ratios and rapid-switching color-changeable devices based on poly(3,4-propylenedioxythiophene) derivative and counterelectrode. Xu, Chunye; Tamagawa, Hirohisa; Uchida, Mikio; Taya, Minoru (Univ. of Washington, Seattle, WA, 98195, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4695(Electroactive Polymer Actuators and Devices (EAPAD)), 442-450 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.
AB A large contrast ratio and rapid switching electrochromic (EC) polymer device which consists of **laminated** two-layer structure between two electrodes was proposed. The new design which only comprises an ITO coated glass electrode, a cathodic poly(3,4-propylenedioxythiophene) deriv. (PProDOT-(CH3)2) EC polymer film, a solid electrolyte and an Au-based counterelectrode which replaces anodic EC polymer and ITO electrode. Carbon-based counterelectrode was prepd. for comparing with Au-based counterelectrode. Lithog. and sputtering were used for Au patterning on glass substrate, while screen printing was used for carbon-based counterelectrode. Covering percentage of Au is less than 20%, in order to keep the electrode high transmittance. The authors also prepd. a solid electrolyte, such as poly(Me methacrylate)(PMMA) based contg. LiClO4 gel electrolyte for solid state applications. A special para-film was utilized on sealing the assembly device. Color change of high contrast ratio of transmittance (> .DELTA. 50% T) of the device is rapidly (0.5-1 s) obtained upon applied 2.5 V voltage and repeatable (10,000 times). The temp. range under which the switching is stable is wide, -40.degree. .apprx. 100.degree. C. The repeatability of current of EC polymer devices while color change was estd. by electrochem.
IT **470676-58-5P**, Poly(3,3-dimethyl-3,4-dihydro-2H-thieno[3,4-b][1,4]-dioxepine)
(cathodic electrochromic layer; large contrast ratio and rapid switching electrochromic polymeric device based on poly(propylenedioxythiophene) deriv. and counterelectrode)
RN 470676-58-5 HCA
CN Poly(3,4-dihydro-3,3-dimethyl-2H-thieno[3,4-b][1,4]dioxepin-6,8-diyl) (9CI) (CA INDEX NAME)



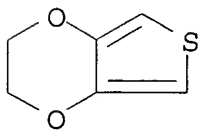
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
ST electrochromic polymer **display device**
IT **470676-58-5P**, Poly(3,3-dimethyl-3,4-dihydro-2H-thieno[3,4-b][1,4]-dioxepine)
(cathodic electrochromic layer; large contrast ratio and rapid switching electrochromic polymeric device based on poly(propylenedioxythiophene) deriv. and counterelectrode)

L32 ANSWER 2 OF 29 HCA COPYRIGHT 2003 ACS on STN
139:28503 **Electroluminescent** element. Gotou, Mariko (Japan). U.S. Pat. Appl. Publ. US 2003113581 A1 20030619, 10 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-320047 20021216. PRIORITY: JP 2001-381941 20011214.
AB An **electroluminescent** element is described comprising a substrate; a 1st electrode layer formed on a surface of the substrate; an org. **electroluminescent** layer formed on the 1st electrode layer, the org. **electroluminescent** layer including at least a luminescent layer; a 2nd electrode layer formed such that the org. **electroluminescent** layer is interposed between the 1st electrode layer and the 2nd electrode layer; and a sealing base material for sealing the 1st electrode layer, the org. **electroluminescent** layer and the 2nd electrode layer, wherein the sealing base material is a flexible film and a **lamination** impact alleviating layer of which universal hardness value is no smaller than 110 N/mm 2 is formed on the 2nd electrode layer. When a flexible film is used as the sealing base material and the flexible film is **laminated** with the substrate at a predetd. pressure, the org. **electroluminescent** layer may be prevented from being scratched or cracked. A method of fabricating the **electroluminescent** element is also described.
IT **126213-51-2**, PEDOT
(hole transporting material; **electroluminescent** element having flexible film as sealing base)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX

NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01J001-62
NCL 428690000; 313504000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 74, 76
ST **electroluminescent** element flexible film impact alleviating layer fabrication
IT **Electroluminescent devices**
(**displays**; **electroluminescent** element having flexible film as sealing base)
IT **Electroluminescent** devices
Electronic device fabrication
(**electroluminescent** element having flexible film as sealing base)
IT Luminescent screens
(**electroluminescent**; **electroluminescent** element having flexible film as sealing base)
IT Metals, uses
Oxides (inorganic), uses
Polymers, uses
(impact alleviating layer; **electroluminescent** element having flexible film as sealing base)
IT Polyesters, uses
(substrate, sealing base material; **electroluminescent** element having flexible film as sealing base)
IT 7440-22-4, Silver, uses 7440-70-2, Calcium, uses 50926-11-9, Indium tin oxide
(electrode; **electroluminescent** element having flexible film as sealing base)
IT 7631-86-9, Silica, uses
(film on electrode; **electroluminescent** element having flexible film as sealing base)
IT 50851-57-5 **126213-51-2**, PEDOT
(hole transporting material; **electroluminescent** element having flexible film as sealing base)
IT 25067-59-8, Polyvinyl carbazole
(luminescent layer; **electroluminescent** element having flexible film as sealing base)
IT 38215-36-0, Coumarin 6

(luminescent layer; **electroluminescent** element having flexible film as sealing base)

IT 25038-59-9, Polyethylene terephthalate, uses
(substrate, sealing base material; **electroluminescent** element having flexible film as sealing base)

L32 ANSWER 3 OF 29 HCA COPYRIGHT 2003 ACS on STN

138:409984 Self-Aligned, Vertical-Channel, Polymer Field-Effect Transistors. Stutzmann, Natalie; Friend, Richard H.; Sirringhaus, Henning (Cavendish Laboratory, University of Cambridge, Cambridge, CB3 0HE, UK). Science (Washington, DC, United States), 299(5614), 1881-1885 (English) 2003. CODEN: SCIEAS. ISSN: 0036-8075. Publisher: American Association for the Advancement of Science.

AB The manuf. of high-performance, conjugated polymer transistor circuits on flexible plastic substrates requires patterning techniques that are capable of defining crit. features with submicrometer resoln. We used solid-state embossing to produce polymer field-effect transistors with submicrometer crit. features in planar and vertical configurations. Embossing is used for the controlled microcutting of vertical sidewalls into polymer **multilayer** structures without smearing. Vertical-channel polymer field-effect transistors on flexible poly(ethylene terephthalate) substrates were fabricated, in which the crit. channel length of 0.7 to 0.9 .mu.m was defined by the thickness of a **spin-coated** insulator layer. Gate electrodes were self-aligned to minimize overlap capacitance by inkjet printing that used the embossed grooves to define a surface-energy pattern.

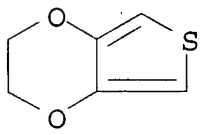
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(PEDOT/PSS; self-aligned, vertical-channel, polymer field-effect transistors)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 76-3 (Electric Phenomena)
Section cross-reference(s): 36

IT **Coating** process
(**spin**; self-aligned, vertical-channel, polymer field-effect transistors)

IT 50851-57-5, Poly(styrenesulfonic acid) **126213-51-2**, Poly(3,4-ethylenedioxythiophene)

(PEDOT/PSS; self-aligned, vertical-channel, polymer field-effect transistors)

L32 ANSWER 4 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:392673 Red-green-blue light-emitting diodes containing fluorene-based copolymers. Drolet, Nicolas; Beaupre, Serge; Morin, Jean-Francois; Tao, Ye; Leclerc, Mario (Canada Research Chair in Polymer Chemistry, Departement de Chimie, Centre de Recherche en Sciences et Inge, Universite Laval, Quebec City, QC, G1K 7P4, Can.). Journal of Optics A: Pure and Applied Optics, 4(6), S252-S257 (English) 2002. CODEN: JOAOF8. ISSN: 1464-4258. Publisher: Institute of Physics Publishing.

AB This paper reports the fabrication and evaluation of light-emitting diodes using polyfluorene derivs. as emitter, which cover the entire visible spectral range. Depending on the compn. of the copolymers, red (emission peak at 656 nm), green (488 nm) and blue (428 nm) emission was obtained without any excimer formation. The optimization of the device performances was realized using a **multilayered** configuration which involves a **spin-coated** poly(ethylenedioxythiophene) doped with poly(styrene sulfonic acid) (PEDT-PSS) thin film on the ITO anode and an ultrathin LiF layer next to the Al cathode. These 2 layers improve the efficiency of the charge injection. Combining this device configuration with some addnl. charge-transporting mols., luminance at 50-300 cd m-2 have been obtained.

IT **155090-83-8**, Baytron P-CH 8000
(Baytron P-CH 8000; red-green-blue light-emitting diodes contg. fluorene-based copolymers)

RN 155090-83-8 HCA

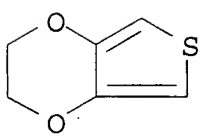
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

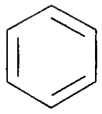


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



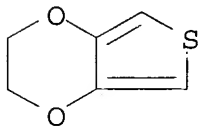
D1— CH═ CH_2

D1— SO_3H

IT **126213-51-2**, Poly(ethylenedioxythiophene)
(red-green-blue light-emitting diodes contg. fluorene-based copolymers)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36
IT **155090-83-8**, Baytron P-CH 8000
(Baytron P-CH 8000; red-green-blue light-emitting diodes contg. fluorene-based copolymers)
IT **126213-51-2**, Poly(ethylenedioxythiophene) 439588-85-9 527693-03-4 527693-04-5
(red-green-blue light-emitting diodes contg. fluorene-based

copolymers)

L32 ANSWER 5 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:290352 Characterization of polymer solar cells by TOF-SIMS depth profiling. Bulle-Lieuwma, C. W. T.; van Gennip, W. J. H.; van Duren, J. K. J.; Jonkheijm, P.; Janssen, R. A. J.; Niemantsverdriet, J. W. (Philips CFT, Eindhoven, 5656 AA, Neth.). Applied Surface Science, 203-204, 547-550 (English) 2003. CODEN: ASUSEE. ISSN: 0169-4332. Publisher: Elsevier Science B.V..

AB Solar cells consisting of polymer layers sandwiched between a transparent electrode on glass and a metal top electrode are studied using dynamic time-of-flight secondary ion mass spectrometry (TOF-SIMS) in dual-beam mode. Because depth profiling of polymers and polymer-metal stacks is a relatively new field the craters were thoroughly studied by environmental SEM (ESEM), interferometry, surface profilometry and tapping mode AFM. A huge increase in crater bottom roughness was obsd. when starting from the aluminum top layer going in depth, resulting in a loss of depth resoln. layer-to-layer diffusion and contaminants at buried interfaces can be extd. from the depth profiles when taking into account the loss of depth resoln.

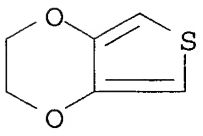
IT **126213-51-2**, Polyethylenedioxy thiophene
(PEDOT, blend with PSS, **spin-coated** films; characterization of polymer solar cells by TOF-SIMS depth profiling)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 73, 76

ST polymer heterojunction solar cell TOF SIMS depth profiling **multilayer**; PEDOT PCBM PPV PSS MDMO polymer layer interface surface

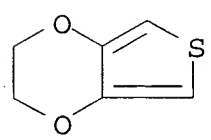
IT Heterojunction solar cells
Interface roughness
Multilayers
Sputtering
Surface structure
TOF-SIMS (time-of-flight secondary-ion mass spectrometry)
(characterization of polymer solar cells by TOF-SIMS depth

profiling)
IT Films
(**multilayer**; characterization of polymer solar cells by TOF-SIMS depth profiling)
IT 177716-59-5, Poly(2-methoxy-5-(3',7'-dimethyl-octyloxy))-p-phenylene vinylene
(MDMO-PPV, neat and blends with PCBM, **spin-coated** films; characterization of polymer solar cells by TOF-SIMS depth profiling)
IT 160848-22-6
(PCBM, neat and blends with MDMO-PPV, **spin-coated** films; characterization of polymer solar cells by TOF-SIMS depth profiling)
IT **126213-51-2**, Polyethylenedioxy thiophene
(PEDOT, blend with PSS, **spin-coated** films; characterization of polymer solar cells by TOF-SIMS depth profiling)
IT 50851-57-5
(PSS, blend with PEDOT, **spin-coated** films; characterization of polymer solar cells by TOF-SIMS depth profiling)

L32 ANSWER 6 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:228961 Manufacture of **electroluminescent** devices.
Tachikawa, Tomoyuki (Dainippon Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003077652 A2 20030314, 11 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2001-263372 20010831.
AB The manufg. process comprises the steps of: on a substrate, forming (1) a 1st electrode stripe array; forming (2) a partition wall array perpendicular to (1); forming an org. **electroluminescent laminate** in (2); and forming a 2nd electrode stripe array perpendicular to (1).
IT **126213-51-2**
(prodn. method of **electro- luminescent** elements)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-10
ICS H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST manuf **electroluminescent** device
IT Phenolic resins, uses
(novolak; prodn. method of **electro- luminescent** elements)
IT **Coating materials**
Electrodes
Electroluminescent devices
Laminated materials
Luminescent substances
Partition
Vapor deposition process
(prodn. method of **electro- luminescent** elements)
IT Polyimides, uses
Polysiloxanes, uses
(prodn. method of **electro- luminescent** elements)
IT 1317-70-0, Anatase 7440-22-4, Silver, uses 7440-70-2, Calcium, uses 37221-36-6, PSS 50926-11-9, ITO 95270-88-5, Polyfluorene **126213-51-2**
(prodn. method of **electro- luminescent** elements)

L32 ANSWER 7 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:160835 Organic **electroluminescent** devices containing a red emissive layer contains blue, green and red emissive materials and a method for manufacturing the devices. Tada, Takumu (Japan). U.S. Pat. Appl. Publ. US 2003030370 A1 20030213, 23 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-214259 20020808. PRIORITY: JP 2001-245734 20010813; JP 2002-123144 20020424.
AB Org. **electroluminescent** devices are described which comprise a plurality of first electrodes disposed on a substrate in matrix; a second electrode disposed with being confronted with each of the plurality of first electrodes; and a emissive layer formed between each of the plurality of first electrodes and the second electrode on each of the plurality of first electrodes, where the emissive layer is composed of a blue (B) emissive layer, a green (G) emissive layer and a red (R) emissive layer as a set of pixels, the org. **electroluminescence** element is further characterized in that the B emissive layer contains a B emissive material, the G emissive layer contains B and G emissive materials, and the R emissive layer contains B, G and R emissive materials. A method for manufg. the org. **electroluminescent** device is discussed which entails forming a plurality of first electrodes divided by a plurality of separators and disposed on a substrate in matrix; forming a B emissive **layer** on the **plurality** of first electrodes by diffusing a B emissive material; obtaining a G emissive layer adjacent to the B emissive layer after diffusing a G emissive material in a part of the B emissive layer; obtaining a R emissive layer adjacent to the G emissive layer after diffusing a R

emissive material in a part of the G emissive layer; and forming a second electrode on each of the R and G and B emissive layers.

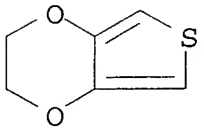
IT **126213-51-2**, Polyethylene dioxythiophene
(layer contg. polystyrenesulfonate and; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-14
NCL 313504000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 76
ST org **electroluminescent** device fabrication diffusion; **OLED** blue green red emissive layer diffusion
IT Diffusion
(emissive layer formed by; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)
IT **Electroluminescent** devices
Electronic device fabrication
(org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)
IT 1450-63-1, 1,1,4,4-Tetra phenyl-1,3-butadiene
(blue-emitting material; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)
IT 7440-22-4, Silver, uses 7440-70-2, Calcium, uses
(cathode layer; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)
IT 38215-36-0, Coumarin-6
(film on Si substrate, green-emitting material; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)
IT 50926-11-9, Indium tin oxide

(glass substrate coated with; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT 50851-57-5
(layer contg. polyethylene dioxythiophene and; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT **126213-51-2**, Polyethylene dioxythiophene
(layer contg. polystyrenesulfonate and; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT 15082-28-7, 2-(4-Biphenylyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole
25067-59-8, Poly(N-vinylcarbazole)
(org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT 51325-95-2
(red-emitting material; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT 7440-57-5, Gold, uses
(release layer; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

IT 7440-21-3, Silicon, uses
(substrate; org. **electroluminescent** devices contg. red emissive layer contains blue, green and red emissive materials and method for manufg. devices)

L32 ANSWER 8 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:128647 Fully transparent, organic light-emitting electrochemical cells. Ouisse, T.; Armand, M.; Kervella, Y.; Stephan, O. (Laboratoire de Spectrometrie Physique, Universite Joseph Fourier Grenoble 1 and CNRS, Saint-Martin d'He` res, 38042, Fr.). Applied Physics Letters, 81(17), 3131-3133 (English) 2002. CODEN: APPLAB. ISSN: 0003-6951. Publisher: American Institute of Physics.

AB The authors report the fabrication and performance of fully transparent, org. blue light-emitting electrochem. cells (OLECs), in which both the anode and cathode are made of In Sn oxide. The active layer is a blend of polyfluorene with long and flexible alkyl side chains grafted on the 9,9 position and of a molten salt. Two identical **spin-coated** active layers are **laminated** together at high temp. to form the OLECs. The electroluminescence threshold is .apprx.3.3 V and the light intensity exceeds 10 .mu.W/cm2 at 5 V.

IT **155090-83-8**
(fully transparent, org. light-emitting electrochem. cells contg.)

RN 155090-83-8 HCA

CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with

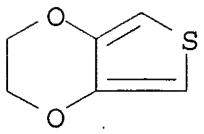
2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

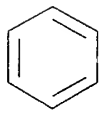


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1—CH═CH$_2$

D1—SO$_3$H

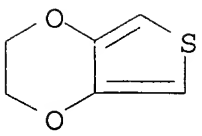
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 36
IT Electric current-potential relationship
Electron-hole recombination

Lamination
Luminescence
Luminescence, electroluminescence
Radiative recombination
(fully transparent, org. light-emitting electrochem. cells with)
IT 50926-11-9, ITO **155090-83-8** 268536-01-2,
Tetrahexylammonium-bis(trifluoromethylsulfonyl)imide 268536-02-3
(fully transparent, org. light-emitting electrochem. cells contg.)

L32 ANSWER 9 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:114821 Organic **light-emitting** elements which can employ non-volatile or insoluble materials and **light-emitting** devices using the elements. Seo, Satoshi; Murakami, Masakazu; Yamazaki, Shunpei (Semiconductor Energy Laboratory Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2003015960 A1 20030123, 36 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-158233 20020531. PRIORITY: JP 2001-167508 20010601; JP 2001-167662 20010604.
AB Org. **light-emitting** elements are described which comprise an org. compd. layer sandwiched between an anode and a cathode, the org. compd. layer comprising a mixed **layer** having a **plurality** of org. compds. serving as a host material and a guest material, where .gtoreq.1 of the org. compds. that serve as the host material forms a uniform amorphous film, and where the guest material forms an aggregation having a diam. .ltoreq.1 than the thickness of the mixed layer. **Light-emitting** devices are described having a **light-emitting** element comprising an anode; a cathode, and an org. compd. layer placed between the anode and the cathode, the org. compd. **layer** contg. **plural** kinds of org. compds., where the org. compd. **layer** comprises a **plurality** of org. compds. that form a uniform amorphous film and .gtoreq.1 of org. compds. that are scattered in the amorphous film in the form of granule having a diam. < the thickness of the org. compd. layer.
IT **126213-51-2**, Poly(ethylene dioxythiophene)
(hole injection layer contg.; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-00
NCL 313504000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
ST org **light emitting** element device granule aggregate material
IT **Electroluminescent devices**
(**displays**; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT **Luminescent** screens
(**electroluminescent**; **org. light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT Fluorescent substances
Phosphorescent substances
(granules or guest material forming aggregates; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT Electric appliances
Electroluminescent devices
(org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT Aggregates
Granular materials
(org. **light-emitting** elements which can employ non-volatile or insol. materials in form of)
IT 7440-21-3, Silicon, uses
(cryst. film; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT 7631-86-9, Silica, uses
(gate insulating film; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT 50851-57-5, Poly (styrenesulfonic acid) **126213-51-2**, Poly(ethylene dioxythiophene)
(hole injection layer contg.; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)

IT 147-14-8, Copper phthalocyanine
(hole injection layer; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT 15082-28-7, 2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole 25067-59-8, Poly(N-vinylcarbazole)
(host mixt. contg.; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT 94928-86-6, Tris(2-phenylpyridine) iridium
(insol. guest material; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)
IT 12033-89-5, Silicon nitride, uses
(protective film; org. **light-emitting** elements which can employ non-volatile or insol. materials and **light-emitting** devices using elements)

L32 ANSWER 10 OF 29 HCA COPYRIGHT 2003 ACS on STN
138:98008 **Light-emitting** devices and methods of manufacturing the devices involving simplified formation of a **laminate** structure of organic films deposited from solutions in protic and aprotic solvents. Ogino, Kiyofumi; Shibata, Noriko (Semiconductor Energy Laboratory Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2003006699 A1 20030109, 26 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-177752 20020624. PRIORITY: JP 2001-191678 20010625.
AB Methods of manufg. **light-emitting** devices are discussed which entail forming a 2nd org. compd. layer on a 1st org. compd. layer; forming a 1st conductive film on the 2nd org. compd. layer; etching a portion of the 2nd org. compd. layer by a wet etching, where the portion of the 2nd org. compd. layer does not overlap the 1st conductive film; forming a 3rd org. compd. layer on the 1st org. compd. layer; forming a 2nd conductive film on the 3rd org. compd. layer; etching a portion of the 1st org. compd. layer by a dry etching, where the portion of the 1st org. compd. layer does not overlap the 1st and 2nd conductive films, where the 1st org. compd. layer is formed by applying a soln. including a protic solvent, where each of the 2nd and 3rd org. compd. layers is formed by applying a soln. including an aprotic solvent. **Light-emitting** devices are described which comprise a 1st **light-emitting** element including a 1st anode; a 1st org. compd. layer in contact with the 1st anode; a 2nd org. compd. layer in contact with the 1st org. compd. layer; a 1st cathode in contact with the 2nd org. compd. layer; a 2nd **light-emitting** element including a 2nd anode; a 3rd org. compd. layer in contact with the 2nd anode; a 4rt org. compd. layer in contact with the 3rd org. compd. layer; a 2nd cathode in contact with the 4th org. compd. layer; a 3rd **light-emitting** element including a 3rd anode; a 5th org. compd. layer in contact with the 3rd anode; a 6th org. compd. layer in contact with the 5th org. compd. layer; a 3rd

cathode in contact with the 6th org. compd. layer; a conductive film in contact with the 1st, 2nd and 3rd cathodes.

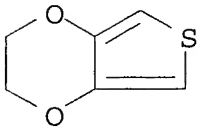
IT **126213-51-2**, PEDOT
(**light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-00
NCL 313506000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 74, 76

ST **electroluminescent** device fabrication org film **laminate** protic aprotic solvent; **OLED** manufg film deposition protic aprotic solvent

IT Solvents
(aprotic; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT Polyacetylenes, uses
(deriv.; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT **Electroluminescent devices**
(**displays**; **light-emitting devices** and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT Etching
(dry; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents and use of)

IT Luminescent screens
(**electroluminescent**; **light-emitting**

devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT **Electroluminescent** devices
Electronic device fabrication
(**light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT Etching
(**light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents and use of)

IT Etching
(plasma, oxygen; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents and use of)

IT Solvents
(protic; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 50926-11-9, Indium tin oxide
(anode; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 67-66-3, Chloroform, uses 67-68-5, Dimethyl sulfoxide, uses 71-43-2, Benzene, uses 75-09-2, Dichloromethane, uses 96-48-0, .gamma.-Butyrolactone 100-66-3, Anisole, uses 108-88-3, Toluene, uses 108-90-7, Chlorobenzene, uses 108-94-1, Cyclohexanone, uses 109-99-9, Tetrahydrofuran, uses 110-82-7, Cyclohexane, uses 111-76-2, Butylcellosolve 119-64-2, Tetralin 123-91-1, Dioxane, uses 872-50-4, N-Methyl-2-pyrrolidone, uses 1330-20-7, Xylene, uses 25321-22-6, Dichlorobenzene
(aprotic solvent, etchant; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 7429-90-5, Aluminum, uses
(auxiliary electrode; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 95270-88-5D, Polyfluorene, dialkyl deriv.
(blue-**emitting** layer; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 12798-95-7

(cathodes; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 26009-24-5D, Poly1,4-phenylene vinylene, dialkoxyphenyl derivs.
(green-**emitting** layer; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 9033-83-4D, Polyphenylene, alkyl derivs. 25067-58-7D, Polyacetylene, deriv. 25190-62-9D, Poly(1,4-phenylene), deriv. 25190-62-9D, Poly(1,4-phenylene), dialkoxy deriv. 25233-30-1, Polyaniline 25233-34-5D, Polythiophene, alkyl deriv. 25233-34-5D, Polythiophene, deriv. 26009-24-5D, Poly(1,4-phenylene-1,2-ethenediyl), deriv. 95270-88-5D, Polyfluorene, deriv. 98705-03-4, Polyhexylphenylacetylene 104934-50-1, Poly(3-hexylthiophene) 120659-35-0, Poly(3-cyclohexylthiophene) **126213-51-2**, PEDOT 138184-36-8 141807-85-4, Poly[3-(4-octylphenyl)thiophene] 157673-32-0 159838-09-2, Poly[3-(4-octylphenyl)-2,2'-bithiophene] 163045-79-2, Poly(3-cyclohexyl-4-methylthiophene) 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 220613-28-5 482373-10-4
(**light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

IT 7782-44-7, Oxygen, uses
(plasma etching; **light-emitting** devices and methods of manufg. the devices involving simplified formation of **laminate** structure of org. films deposited from solns. in protic and aprotic solvents)

L32 ANSWER 11 OF 29 HCA COPYRIGHT 2003 ACS on STN
137:325878 **Multi-layer** polymer light-emitting diodes with 2,3-dialkoxy-p-phenylene vinylene and its blends. Sano, Takeshi; Tuan, Chi-Shen; Martin, Rainer E.; Holmes, Andrew B. (Materials and Devices Development Center, SANYO Electric Co., Ltd., Osaka, 573-8534, Japan). Journal of Photopolymer Science and Technology, 15(2), 253-258 (English) 2002. CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.

AB A green-fluorescent polymer, poly(2,3-dibutoxy-1,4-phenylene vinylene) (DB-PPV) was synthesized via dehydro-halogenation polymn. of 2,3-dibutoxy-1,4-bis(bromomethyl)benzene using K tert-butoxide initiator in dry THF, to obtain DB-PPV as yellow fibers. The photoluminescence (PL) peak wavelength of DB-PPV in soln. is 492 nm and the PL quantum yield in chloroform is 72%; the PL peak wavelength of **spin-coated** films is 522 nm and PL quantum yield is 22%. Electroluminescent PLED devices were assembled using various layers of DB-PPV; poly(3,4-ethylenedioxithiophene): poly(styrenesulfonic acid) (PEDOT:PSS) as buffer layer and hole transport layer; and 1,3-bis[5-(p-t-butyl-

phenyl)-1,3,,4-oxadiazol-2-yl]benzene (OXD-7) and tris(8-hydroxy quinolinato)aluminum (Alq3) as electron transport-layer. The EL efficiency of ITO/DB-PPV/Ca/Al devices improved when an electron transport-layer was incorporated into the structure. A blend of DB-PPV and poly(9,9-dioctylfluorene) (PF8) was also used in PLED structures; the EL peak wavelength was blue-shifted to 503 nm and the EL efficiency improved.

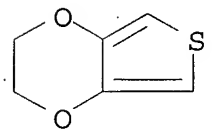
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer and hole transport-layer; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35, 73

IT Polymerization
(dehydro-halogenation; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT Fluorescence
Hole transport
Luminescence
(electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT Polymer blends
(electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT Poly(arylenealkenylenes)
(electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT Electroluminescent devices
(green-emitting; electroluminescence efficiency of **multi -layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 50851-57-5, Poly(styrenesulfonic acid) **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer and hole transport-layer; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses
(cathodes; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 50926-11-9, ITO
(contact layer; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 208264-13-5P 224456-13-7P
(electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 2085-33-8, Alq3 138372-67-5, 1,3-Bis[5-(p-tert-butyl-phenyl)-1,3,,4-oxadiazol-2-yl]benzene
(electron transport-layer; electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

IT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl)
(poly(9,9-dioctylfluorene); electroluminescence efficiency of **multi-layer** PLEDS with prepd. poly(2,3-dibutoxy-p-phenylene vinylene) and blend with polyfluorene emitter)

L32 ANSWER 12 OF 29 HCA COPYRIGHT 2003 ACS on STN

137:317570 Novel heterolayer organic **light-emitting** diodes based on a conjugated dendrimer. Ma, Dongge; Lupton, John M.; Beavington, Richard; Burn, Paul L.; Samuel, Ifor D. W. (School of Physics and Astronomy, University of St. Andrews, St. Andrews, KY16 9SS, UK). Advanced Functional Materials, 12(8), 507-511 (English) 2002. CODEN: AFMDC6. ISSN: 1616-301X. Publisher: Wiley-VCH Verlag GmbH.

AB We demonstrate a novel org. **light-emitting** diode (LED) heterolayer structure that contains a conjugated dendrimer as the **light-emitting** mol. The LED was prepd. by **spin-coating** two dendrimer layers from the same solvent. The device consists of a graded bilayer structure formed from a neat dendrimer film covered with a film consisting of the same dendrimer but doped with the electron-transporting material 2-(4-biphenylyl)-5-phenyl-1,3,4-oxadiazole (PBD). In this device, the heterojunction interface present in conventional bilayer org. **light-emitting** diodes is eliminated, and is replaced by a graded interlayer. By optimizing the concn. of PBD in the dendrimer, a peak **electroluminescence** (**EL**) external quantum efficiency of 0.16% at 600 cd m-2 was obtained. The **EL** quantum efficiency is significantly enhanced in

comparison with devices based on a single layer, a conventional bilayer, and a single-layer doped with PBD. The **EL** quantum efficiency is a factor of 8 larger than that of a conventional bilayer LED made with the conjugated dendrimer as the emissive layer and poly(methylmethacrylate) (PMMA) doped with PBD as the electron-transporting layer. The best blended device exhibited only one third of the efficiency of the graded device. The improvement in the operating characteristics of the graded device is attributed to the efficient device structure, in which exciton formation is improved by a graded doping profile of electron- and hole-transporting components.

IT **155090-83-8**
(novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device contg.)

RN 155090-83-8 HCA

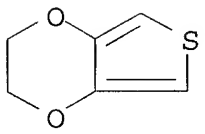
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

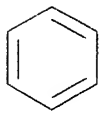


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76

ST heterolayer org **light emitting** diode conjugated dendrimer **electroluminescence**; **OLED** graded dendrimer PBD doped PEDOT polystyrenesulfonate **spin coating**

IT Dendritic polymers
(conjugated; novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device)

IT **Electroluminescent** devices
(novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device)

IT Electric current-potential relationship
Luminescence, **electroluminescence**
(of heterolayer org. **light-emitting** diodes based on conjugated dendrimer)

IT **Coating** process
(**spin**; heterolayer org. **light-emitting** diodes based on conjugated dendrimer fabricated using)

IT 852-38-0, 2-(4-Biphenylyl)-5-phenyl-1,3,4-oxadiazole
(dopant; novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device contg.)

IT 340026-46-2
(novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device)

IT 9011-14-7, PMMA **155090-83-8**
(novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device contg.)

IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50926-11-9, ITO

(novel heterolayer org. **light-emitting** diodes based on conjugated dendrimer deposited sequentially to form graded **multilayer** device contg.)

L32 ANSWER 13 OF 29 HCA COPYRIGHT 2003 ACS on STN
137:224259 Thermal imaging processes and products of electroactive organic material. Blanchet-Fincher, Graciela Beatriz (E. I. Du Pont de Nemours and Company, USA). PCT Int. Appl. WO 2002070271 A2 20020912, 33 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US8164 20020221. PRIORITY: US 2001-PV272440 20010301.

AB Processes for effecting thermal transfer of electroactive org. material are disclosed wherein unwanted portions of a layer of electro org. material supported by a donor element are removed or transferred from the layer by thermal transfer, particularly laser-induced thermal transfer, leaving a desired pattern of the electroactive org. material on the donor element. The electroactive org. material may be an org. material exhibiting **electroluminescence**, charge transport, charge injection, elec. cond., semicond. and/or exciton blocking. The layer of electroactive org. material may comprise more than one layer of different types of electroactive org. material. The exposure pattern is a neg. image of the desired pattern. The electroactive org. material of the desired pattern is not, therefore, exposed to the heat which can cause decompn. The desired pattern of electroactive org. material may then be gently transferred from the donor element to a desired substrate by **lamination**, for example, without damaging the electroactive org. material. The substrate may be used to form org. electronic devices, such as **light emitting** displays, photodetectors and photovoltaic cells. Donor elements for use in the processes are also disclosed.

IT **155090-83-8**, Baytron P
(charge injection layer; thermal imaging processes and products of electroactive org. material contg.)

RN 155090-83-8 HCA

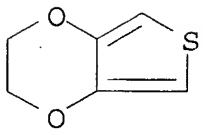
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

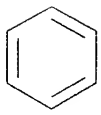


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

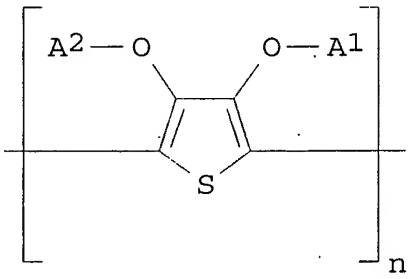
D1— SO_3H

IC ICM B41M003-00
ICS B41M007-00
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
ST thermal transfer process **light emitting device display**
IT **Electroluminescent** devices
Optical detectors
Photoelectric devices
(thermal imaging processes and products of electroactive org. material for)
IT 50851-57-5, Polystyrene sulfonic acid **155090-83-8**, Baytron

P 427889-73-4, XICP-OS 01
(charge injection layer; thermal imaging processes and products of electroactive org. material contg.)

L32 ANSWER 14 OF 29 HCA COPYRIGHT 2003 ACS on STN
137:224253 **Multilayer** arrangement with conductive polymer for flat **panel** electro-optical **display**. Wehrmann, Rolf; Heuer, Helmut-Werner; Karbach, Alexander (Bayer Aktiengesellschaft, Germany). Eur. Pat. Appl. EP 1239322 A2 20020911, 7 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (German). CODEN: EPXXDW. APPLICATION: EP 2002-3272 20020222. PRIORITY: DE 2001-10110755 20010307; DE 2001-10127401 20010606.

GI



I

AB The invention relates to a **multilayer** arrangement including an elec. conductive polymer layer-contg. transparent substrate applicable for a flat **panel** electro-optical **display** like a liq. crystal display, electrochromic display, etc., wherein the conductive polymer is polyaniline, polypyrrol, or polythiophene represented by I (A1, A2 = C1-18-alkyl, C1-18-alkylene; n = 2-10,000). The transparent substrate may comprise a glass or polymer. The conductive polymer layer reduced the surface roughness of the substrate.

IT **155090-83-8**, Baytron P
(conductive polymer in **multilayer** substrate for flat **panel** electro-optical **display**)

RN 155090-83-8 HCA

CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

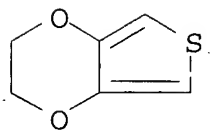
CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x

CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

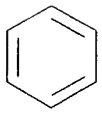


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

IC ICM G02F001-1343
ICS G02F001-1333; H01B001-12; C08G061-12; C09D005-24
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **multilayer** substrate conductive polymer flat **panel** electrooptical **display** polythiophene
IT Polyanilines
(conductive polymer in **multilayer** substrate for flat **panel** electro-optical **display**)
IT Conducting polymers
Electrochromic imaging devices

Electrooptical imaging devices
Liquid crystal displays
(**multilayer** substrate with conductive polymer for flat **panel** electro-optical **display**)

IT Conducting polymers
(polypyrroles; conductive polymer in **multilayer** substrate for flat **panel** electro-optical **display**)

IT Conducting polymers
(polythiophenes; conductive polymer in **multilayer** substrate for flat **panel** electro-optical **display**)

IT Glass, uses
Polyesters, uses
Polyesters, uses
(transparent substrate; **multilayer** substrate with conductive polymer for flat **panel** electro-optical **display**)

IT **155090-83-8**, Baytron P
(conductive polymer in **multilayer** substrate for flat **panel** electro-optical **display**)

IT 25038-59-9, Polyethyleneterephthalate, uses
(transparent substrate; **multilayer** substrate with conductive polymer for flat **panel** electro-optical **display**)

L32 ANSWER 15 OF 29 HCA COPYRIGHT 2003 ACS on STN
137:12919 Sol-gel-deposited Sb-doped SnO2 as transparent anode for **OLED**: process, patterning, and hole injection characteristics. Vaufrey, David; Ben Khelifa, M.; Besland, Marie-Paule; Sandu, C.; Blanchin, Marie-Genevieve; Teodorescu, Valentin S.; Roger, Jean-Alain; Tardy, Jacques (Laboratoire d'Electronique, Optoelectronique et Microsystemes, (UMR CNRS 5512), Ecole Centrale de Lyon, Ecully, 69131, Fr.). Proceedings of SPIE-The International Society for Optical Engineering, 4464(Organic Light-Emitting Materials and Devices V), 103-112 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB This paper reports on the potentialities of sol-gel deposited Sb doped SnO2(TO) as a new transparent conducting oxide (TCO) for anode in org. **light emitting** diodes (**OLED**). **Multilayered** films with transparency over 85% and resistivity <5 103.OMEGA. -cm were obtained. Structural observations by TEM show that the films are nanocrystd. Smaller and more uniform grains are obtained upon rapid thermal annealing. At. Force Microscopy (AFM) imaging shows the surface roughness does not exceed 20 A. TO films are very stable and cannot be chem. etched. Anode patterning by reactive ion etching (RIE) in a Methane- H plasma was experienced and is described. Typical etching around 250 A/min were obtained. TO/PEDOT/PVK/Al hole only diodes were realized to assess sol gel TO films as hole injection electrodes. Devices with threshold voltages of 6 V were obtained. A comparison with ITO

deposited by low temp. cathodic sputtering is given.

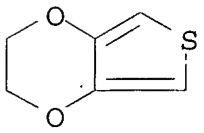
IT **126213-51-2**, PEDOT
(antimony-doped tin dioxide sol-gel-deposited transparent anode for **LED** contg.)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT Sol-gel processing
(-deposited antimony-doped tin dioxide as transparent anode for **LED**)

IT Atomic force microscopy
Electric current-potential relationship
Electric resistance
Surface roughness
Transmission electron microscopy
(of sol-gel-deposited antimony-doped tin dioxide as transparent anode for **LED**)

IT Transparent materials
(sol-gel-deposited antimony-doped tin dioxide as **LED** anode)

IT Anodes
(sol-gel-deposited antimony-doped tin dioxide as **LED** transparent)

IT **Electroluminescent** devices
(sol-gel-deposited antimony-doped tin dioxide as transparent anode for)

IT 7440-36-0, Antimony, uses
(-doped tin dioxide sol-gel-deposited transparent anode for **LED**)

IT 18282-10-5, Tin dioxide
(antimony-doped sol-gel-deposited transparent anode for **LED**)

IT 25067-59-8, 9H-Carbazole, 9-ethenyl-, homopolymer
126213-51-2, PEDOT
(antimony-doped tin dioxide sol-gel-deposited transparent anode for **LED** contg.)

L32 ANSWER 16 OF 29 HCA COPYRIGHT 2003 ACS on STN
137:12916 High-performance flexible polymer light-emitting diodes fabricated via a low-temperature plastic **laminated** process. Guo, Tzung-Fang; Chang, Shun-Chi; Pyo, Seungmoon; Yang, Yang (Department of Materials Science and Engineering, University of California-Los Angeles, Los Angeles, CA, 90095-1595, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4464(Organic Light-Emitting Materials and Devices V), 34-41 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The fabrication of high performance polymer LEDs (PLEDs) using a low temp., plastic **lamination** process is reported. Blue- and red-emitting PLEDs were fabricated by **laminating** different luminescent polymers and org. compds. together to form the active media. This unique approach eliminates the issue of org. solvent compatibility with the org. **layers** for fabricating **multi-layer** PLEDs. A template activated surface process (TAS) was applied to generate an optimum interface for the low temp. **lamination** process. The at. force microscopy anal. reveals a distinct difference in the surfaces created by the TAS and the **spin-coating** process. This observation coupled with the device data confirms the importance of the activated interface in the **lamination** process.

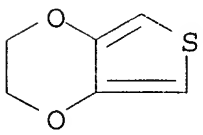
IT **126213-51-2**, PEDOT
(high-performance flexible LED fabricated via low-temp. plastic **laminated** process)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76

ST light emitting diode flexible polymer low temp plastic **laminated**; LED flexible polymer low temp plastic **laminated**

IT Polymers, uses
(high-performance flexible LED fabricated via low-temp. plastic **laminated** process)

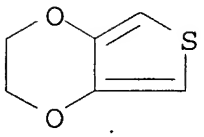
IT **Laminated** plastics, uses
(high-performance flexible polymer LED fabricated via low-temp.

process)
IT Atomic force microscopy
Luminescence, electroluminescence
(of high-performance flexible polymer LED fabricated via low-temp. plastic **laminated** process)
IT Electroluminescent devices
(of high-performance flexible polymer fabricated via low-temp. plastic **laminated** process)
IT **Coating** process
(**spin**; of high-performance flexible polymer LED fabricated via low-temp. plastic **laminated** process)
IT 123847-85-8, .alpha.-NPD 123864-00-6, Poly(9,9-dioctylfluorene)
126213-51-2, PEDOT 138184-36-8, MEH-PPV
(high-performance flexible LED fabricated via low-temp. plastic **laminated** process)

L32 ANSWER 17 OF 29 HCA COPYRIGHT 2003 ACS on STN
136:332912 **Light emitting** device using triplet compound. Yamazaki, Shunpei; Nishi, Takeshi; Mizukami, Mayumi; Ikeda, Hisao (Japan). U.S. Pat. Appl. Publ. US 20020050786 A1 20020502, 43 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-938291 20010824. PRIORITY: JP 2000-258260 20000828.
AB A **light emitting** device is described comprising a substrate having a pixel portion; and a plurality of **EL** elements in the pixel portion, at least one of the **EL** elements comprising an **EL** layer comprising a triplet compd. (e.g., CBP and Ir(ppy)3), wherein the **EL layer** comprises a **plurality** of hole transporting layers contg. MTDATA and layers contg. .alpha.-NPD, and a hole injection layer comprising copper phthalocyanine. The luminance of different colors of **light emitted** from **EL** elements in a pixel portion of a **light emitting** device is equalized and the luminance of **light emitted** from the **EL** elements is raised. A hole transporting layer has a **laminate** structure to thereby cause the **EL** elements to **emit light** of higher luminance. An elec. appliance (e.g, video camera, imaging device, recording medium, personal computer, cellular phone, audio reproducing device) having a **light emitting** device is also described comprising a substrate having a pixel portion; and a plurality of **EL** elements in the pixel portion, at least one of the **EL** elements comprising an **EL** layer comprising a triplet compd., wherein the **EL layer** comprises a **plurality** of hole transporting layers.
IT **126213-51-2**, PEDOT
(**light emitting** device using triplet compd.)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-14
NCL 313504000
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 76
ST org **light emitting display** imaging **device**
IT Electric appliances
Electroluminescent devices
Optical imaging devices
(**light emitting** device using triplet compd.)
IT 7440-44-0, Carbon, processes
(diamond-like films; **light emitting** device using triplet compd.)
IT 7440-64-4, Ytterbium, processes
(film; **light emitting** device using triplet compd.)
IT 7440-56-4, Germanium, processes 7723-14-0, Phosphorus, processes
(**light emitting** device using triplet compd.)
IT 147-14-8, Copper phthalocyanine 1314-13-2, Zinc oxide (ZnO), processes 2085-33-8, AlQ3 7440-21-3, Silicon, processes 7440-33-7, Tungsten, processes 7631-86-9, Silicon oxide, processes 11105-01-4, Silicon oxynitride 12024-08-7, Gallium oxide (GaO) 12033-62-4, Tantalum nitride 26009-24-5, Poly(1,4-phenylene-1,2-ethenediyl) 58328-31-7, 4,4'-Bis(carbazol-9-yl)biphenyl 94928-86-6, Tris(2-phenylpyridine)iridium 123847-85-8, .alpha.-NPD 124729-98-2, MTDATA **126213-51-2**, PEDOT
(**light emitting** device using triplet compd.)

L32 ANSWER 18 OF 29 HCA COPYRIGHT 2003 ACS on STN
136:238752 Controlling exciton diffusion in **multilayer** white phosphorescent organic **light emitting** devices.
D'Andrade, Brian W.; Thompson, Mark E.; Forrest, Stephen R. (Center for Photonics and Optoelectronic Materials (POEM), Princeton Materials Institute (PMI), Department of Electrical Engineering, Princeton University, Princeton, NJ, 08544, USA). Advanced Materials (Weinheim, Germany), 14(2), 147-151 (English) 2002. CODEN: ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.
AB The combination of 2 **multilayer** org. **light emitting** diodes and blue, yellow, and red phosphor doped emissive regions was used to efficiently produce white light. Two white **OLED** (WOLED) structures were used, i.e., device 1 is

a 3 phosphor structure and device 2 is a blocking layer structure. At .lambda. = 520-600 nm, device 2 had almost no **electroluminescent** spectra emission, while device 1 had considerably more emission from bis(2-phenylbenzothiozolato-N-C2)iridium(acetylacetonate) (Bt2Ir(acac)) in this region. The addnl. doped layer improved the efficiency of device 2 as compared to device 1 by boosting the yellow emission where the human eye had the highest photonic response efficiency, and using Bt2Ir(acac). The **multi**-emissive **layer** fully electrophosphorescent WOLEDs could take advantage of the diffusion of triplets to produce bright white devices with high power and quantum efficiencies. The device color could be tuned by varying the thickness and the dopant concns. in each layer, and by introducing exciton blocking layers between emissive layers.

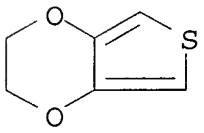
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(controlling exciton diffusion in **multilayer** white phosphorescent org. **light emitting** devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76

ST white polymer **light emitting** diode **multilayer** exciton diffusion

IT **Electroluminescent** devices
Exciton
Luminescence, **electroluminescence**
(controlling exciton diffusion in **multilayer** white phosphorescent org. **light emitting** devices)

IT 4733-39-5, 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline 50851-57-5, Poly(styrene sulfonic acid) 58328-31-7 123847-85-8 **126213-51-2**, Poly(3,4-ethylenedioxythiophene) 337526-88-2 343978-79-0 376367-93-0
(controlling exciton diffusion in **multilayer** white phosphorescent org. **light emitting** devices)

IT 94928-86-6, Tris(2-phenylpyridine)iridium
(controlling exciton diffusion in **multilayer** white phosphorescent org. **light emitting** devices)

L32 ANSWER 19 OF 29 HCA COPYRIGHT 2003 ACS on STN
136:86382 Electrochromic Properties of **Laminate** Devices Fabricated from Polyaniline, Poly(ethylenedioxythiophene), and Poly(N-methylpyrrole). Boehme, Jeffrey L.; Mudigonda, Dhurjati S. K.; Ferraris, John P. (Department of Chemistry, The University of Texas at Dallas, Richardson, TX, 75083-0688, USA). Chemistry of Materials, 13(12), 4469-4472 (English) 2001. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

AB The electrochromism of **laminated** conducting polymer layers was studied in a test assembly with vanadium pentoxide as counter-electrode an a polymer gel electrolyte. Three **laminate** systems were studied using combinations of poly(3,4-ethylenedioxythiophene), poly(N-methylpyrrole), and polyaniline as the active electrochromes. The conducting polymers were prepd. by electrochem. polymn. onto ITO substrates. The gel electrolyte comprised poly(Me methacrylate), propylene carbonate, and ethylene carbonate in acetonitrile with lithium tetrafluoroborate and was **spin-coated** onto the V2O5 surface. The color change of the **multilayers** was measured using a spectrocolorimeter and analyzed using Commission Internationale de l'Eclairage 1931 (x, y)-chromaticity coordinates. The color of the conducting polymer layers in the fully oxidized and reduced states is linearly dependent on the color coordinates of the two individual polymers that comprise the **laminate**.

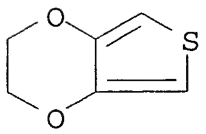
IT **126213-51-2P**, Poly(ethylenedioxythiophene)
(prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 36-5 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 73, 76

ST polyaniline conducting polymer **multilayer** electrochromism chromaticity coordinate; ethylenedioxythiophene homopolymer **laminate** prepn electrochromism; methylpyrrole homopolymer **multilayer** electrochromism measurement; conducting polymer prepn electrochem polymn **multilayer** electrochromism

IT Polymerization
(electrochem.; prepn. and tailored electrochromism of polyaniline

and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT Conducting polymers
(polypyrroles; prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT Conducting polymers
(polythiophenes; prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT Electrochromic materials
Electrochromism
Multilayers
(prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT Polyanilines
(prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT **Coating** process
(**spin**; prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT 1314-62-1, Vanadium oxide (V2O5), uses
(counter-electrode; prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT 75-05-8, Acetonitrile, uses 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 9011-14-7, Poly(methyl methacrylate) 14283-07-9, Lithium tetrafluoroborate
(polymer gel electrolyte; prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

IT 25233-30-1P, Polyaniline 72945-66-5P, Poly(N-methylpyrrole) **126213-51-2P**, Poly(ethylenedioxythiophene)
(prepn. and tailored electrochromism of polyaniline and poly(ethylenedioxythiophene) and poly(N-methylpyrrole) conducting polymer **multilayers**)

L32 ANSWER 20 OF 29 HCA COPYRIGHT 2003 ACS on STN
136:62438 **Multilayer** structures as stable hole-injecting electrodes for use in high efficiency organic electronic devices. Parker, Ian D.; Zhang, Chi (Uniax Corporation, USA). PCT Int. Appl. WO 2001099207 A2 20011227, 43 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT,

SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US19482 20010618. PRIORITY: US 2000-PV212924 20000620.

AB **Multilayer** electrodes are described which comprise a first layer having a first layer cond., a second layer in contact with the first layer, the second layer comprising a conductive org. material having a second layer cond., and a third layer in contact with the second layer, the third layer comprising a conductive org. material having a third layer cond. greater than the second layer cond. and less than the first layer cond. Preferably, the second layer of the **multilayer** electrode comprises a blend of conjugated conductive org. polymer with nonconductive polymer. Pixellated **displays** and electronic **devices**, esp. devices including photoactive layers, employing the electrodes are also described.

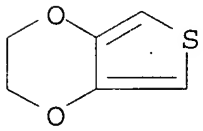
IT **126213-51-2**, Poly(ethylenedioxythiophene)
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01L051-20

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 73, 74

ST **multilayer** hole injecting electrode org electronic device; display **multilayer** hole injecting electrode

IT Polyanilines
(doped; **multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

IT Electric contacts
Electrodes
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

IT Poly(arylenealkenylenes)
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

IT **Electroluminescent** devices
(org.; **multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

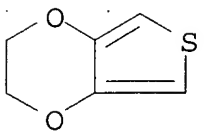
IT 25233-30-1, Polyaniline
(doped; **multilayer** structures as stable hole-injecting

electrodes for use in high efficiency org. electronic devices)
IT 26009-24-5, Poly(1,4-phenylenevinylene)
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)
IT 27119-07-9, Poly(2-acrylamido-2-methyl-1-propanesulfonic acid
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)
IT 9003-05-8, Poly(acrylamide) **126213-51-2**, Poly(ethylenedioxythiophene)
(**multilayer** structures as stable hole-injecting electrodes for use in high efficiency org. electronic devices)

L32 ANSWER 21 OF 29 HCA COPYRIGHT 2003 ACS on STN
136:12471 Low-cost organic pulse sources for integrated optical modules. Hiltunen, Jussi A.; Rantala, Juha T. (VTT Electronics, Oulu, FIN-90570, Finland). Proceedings of SPIE-The International Society for Optical Engineering, 4284(Functional Integration of Opto-Electro-Mechanical Devices and Systems), 108-114 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.
AB The transient and steady state performance of org. **light-emitting** devices (OLEDs) was studied with a view towards suitability for pulse sources. The rise and fall times of the **electroluminescence** of the different structures and materials were afforded special attention. The tested devices **cover** single and **multi-layer** structures with different layer thicknesses. Both mol. and polymeric- based devices were tested. Mol. materials used in the OLEDs were N, N'-bis(3-methylphenyl)-N,N'-diphenylbenzidine (TPD) as a hole transporter, tris-(8-hydroxyquinolate) Al (Alq3) as an electron transporter/emitter and 4,7-diphenyl-1,10-phenanthroline (BCP) as a hole blocking material. Poly(2-methoxy, 5-(2'-ethyl-hexoxy)-1,4-phenylene-vinylene) (MEH-PPV) and poly(3,4-ethylenedioxythiophene)/poly(styrene) (PEDOT/PSS) were the polymeric materials used in the devices. The effect of the driving voltage on the response time and the c.d. in transients was under study. In addn., changes in the response time were studied, when the bias voltage was applied.
IT **375846-91-6**
(low-cost org. pulse sources for integrated optical modules contg.)
RN 375846-91-6 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76
ST org **light emitting** device pulse source integrated optical module; delay time charge mobility bias voltage **OLED**
IT Luminescence, **electroluminescence**
(rise and fall times of **electroluminescence** of different structures and materials)
IT **Multilayers**
(tested devices **cover** single and **multi-layer** structures with different layer thicknesses)
IT **Electroluminescent** devices
(thin-film; low-cost org. pulse sources for integrated optical modules in)
IT **375846-91-6**
(low-cost org. pulse sources for integrated optical modules contg.)

L32 ANSWER 22 OF 29 HCA COPYRIGHT 2003 ACS on STN
135:324553 Effective design of blue organic electroluminescent devices by introducing functional monomeric layers. Choi, J.-H.; Jung, S.-H.; Kwon, S.-K.; Cho, W.-J.; Ha, C.-S. (Department of Polymer Science and Engineering, Pusan National University, Pusan, 609-735, S. Korea). Materials Science & Engineering, B: Solid-State Materials for Advanced Technology, B85(2-3), 96-99 (English) 2001. CODEN: MSBTEK. ISSN: 0921-5107. Publisher: Elsevier Science S.A..
AB Blue org. electroluminescent devices (OELDs), having a **multi-layered** structure, were fabricated and their performance was studied. A distyryl biphenyl arylene deriv. was synthesized as a blue emitting material. To improve thermal stability of the monomeric hole-transporting emissive material, poly(bisphenol A-co-4-nitro phthalic anhydride-co-1,3-phenylene diamine) was used as a matrix. For more effective design of the devices, poly(styrene sulfonate) doped poly(3,4-ethylenedioxythiophene), and 2,9-dimethyl-4,7-diphenyl-1,10-phenanthroline (bathocuproine) and

tris(8-quinolinolato)aluminum (Alq3) were introduced as a buffer layer, a hole-blocking layer, and an electron-injection layer, resp. The OELDs showed bright green color when the Bathocuproine layer was not applied.

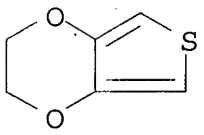
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer layer, doped with poly(styrene sulfonate); effective design of blue org. electroluminescent devices by introducing functional monomeric layers)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 36, 76

IT Films
(**multilayer**; effective design of blue org. electroluminescent devices by introducing functional monomeric layers)

IT **Coating** process
(**spin**; effective design of blue org. electroluminescent devices by introducing functional monomeric layers)

IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(buffer layer, doped with poly(styrene sulfonate); effective design of blue org. electroluminescent devices by introducing functional monomeric layers)

L32 ANSWER 23 OF 29 HCA COPYRIGHT 2003 ACS on STN

135:280269 **Electroluminescent** devices employing organic luminescent material/clay nanocomposites. Park, O-Ok; Lee, Tae-Woo (Korea Advanced Institute of Science and Technology, S. Korea). PCT Int. Appl. WO 2001072925 A1 20011004, 20 pp. DESIGNATED STATES: W: DE, JP, KR, US. (English). CODEN: PIXXD2. APPLICATION: WO 2001-KR534 20010330. PRIORITY: KR 2000-16466 20000330.

AB **Org. luminescent** material/clay nanocomposites, prepd. in a form of quantum well by blending an **org. luminescent** material and a nanoclay, are described and **electroluminescent** devices employing the nanocomposites as active layers are discussed. The **electroluminescent**(**EL**) devices comprise a transparent substrate; a semitransparent electrode deposited on the transparent substrate; a

clay nanocomposite emissive layer **spin-coated** with the org. **EL** material/clay nanocomposite, positioned on the semitransparent electrode; and, a metal electrode deposited on the clay nanocomposite emissive layer. The **EL** devices can also contain a hole transporting layer positioned on the semitransparent electrode and/or an electron transporting layer positioned on the clay nanocomposite emissive layer.

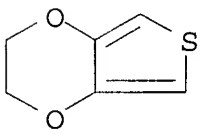
IT **126213-51-2**, Polyethylene dioxythiophene
(semitransparent electrode; **electroluminescent** devices employing **org. luminescent** material/clay nanocomposites contg.)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM C09K011-00
ICS C09K011-06; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 76

ST **electroluminescent** device **org luminescent** clay nanocomposite; **OLED** polymer clay nanocomposite; **luminescent** material **org** polymer clay nanocomposite

IT Amines, uses
(aryl, tertiary, hole-transporting layer; **electroluminescent** devices employing **org. luminescent** material/clay nanocomposites contg.)

IT **Laminated** materials
(clay; **electroluminescent** devices employing **org . luminescent** material/clay nanocomposites contg.)

IT Amines, uses
(diamines, arom.; **electroluminescent** devices employing **org. luminescent** material/clay nanocomposites contg.)

IT Alloys, uses
(electrode; **electroluminescent** devices employing **org. luminescent** material/clay nanocomposites contg.)

IT **Electroluminescent** devices
Luminescent substances

Nanocomposites
Quantum well devices
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites)

IT Clays, uses
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites)

IT Glass substrates
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT Coordination compounds
Polyacetylenes, uses
Polyanilines
Polymers, uses
Polyquinolines
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT Poly(arylenealkenylenes)
(poly(arylene vinylene); **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT Polyquinoxalines
(polyphenylquinoxalines, poly(phenylquinoxaline); **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT Polyesters, uses
(substrate; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 7439-89-6, Iron, uses 7439-92-1, Lead, uses 7439-93-2, Lithium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-66-6, Zinc, uses 7440-74-6, Indium, uses
(electrode; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 7439-95-4, Magnesium, uses 7440-70-2, Calcium, uses
(electrode; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 7429-90-5, Aluminum, properties
(electrode; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 9003-53-6, Polystyrene
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 25067-59-8, Poly(N-vinylcarbazole) 115708-89-9
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 138184-36-8

(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 120-12-7, Anthracene, uses 198-55-0, Perylene 517-51-1, Rubrene 7385-67-3, Nile red 25067-58-7, Polyacetylene 25087-26-7 25190-62-9, Poly(p-phenylene) 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 38215-36-0, coumarin 6 51325-91-8, 4-(Dicyanomethylene)-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran 65181-78-4, (N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine) 95270-88-5, Polyfluorene 150405-69-9
(**electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 192198-85-9 203915-07-5 302921-88-6
(electron-transporting layer; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 2085-33-8, Alq3
(electron-transporting layer; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 288-13-1, Pyrazole 58328-31-7 123847-85-8, 4,4'-Bis[N-(-naphthyl-1-)-N-phenylamino]biphenyl
(hole-transporting layer; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 1318-93-0, Montmorillonite, properties
(nanoclay; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 1318-74-7, Kaolinite, uses 53320-86-8, Laponite
(nanoclay; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 1335-25-7, Lead oxide **126213-51-2**, Polyethylene dioxythiophene
(semitransparent electrode; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 50926-11-9, Indium tin oxide
(semitransparent electrode; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

IT 14808-60-7, Quartz, uses 25038-59-9, Polyethylene terephthalate, uses
(substrate; **electroluminescent** devices employing **org.** **luminescent** material/clay nanocomposites contg.)

L32 ANSWER 24 OF 29 HCA COPYRIGHT 2003 ACS on STN
135:187082 White and blue temperature stable and efficient OLEDs using amorphous spiro transport and spiro emitting compounds. Spreitzer, Hubert; Vestweber, Horst; Stoessel, Philipp; Becker, Heinrich (Covion Organic Semiconductors GmbH, Frankfurt, D-65926, Germany).

Proceedings of SPIE-The International Society for Optical Engineering, 4105(Organic Light-Emitting Materials and Devices IV), 125-133 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The temp. stability of white and blue OLEDs was studied by observing the I-V, **EL**-V and the spectral characteristics of various devices stored at elevated temp. (.ltoreq.130.degree.). Blue **multilayer** org. **light emitting** diodes (OLEDs) contg. PEDOT (polyethylenedioxythiophene) or PANI (polyaniline) derivs. as the hole injection and buffer layer, arom. diamines like Spiro-TAD (2,2',7,7'-tetrakis(diphenylamino)spiro-9,9'-bifluorene) as a hole transport material (HTM), Spiro-DPVBi (2,2',7,7'-tetrakis(2,2-diphenylvinyl)spiro-9,9'-bifluorene) as an emitting material (EM) and of Alq3 (tris(8-hydroxyquinolinato)aluminum) as the electron-injection and electron-transport layer (ETL) were fabricated. White OLEDs were prepd., contg. an addnl. DCM (dicyanmethylene-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran) doped Alq3 layer between the Spiro-DPVBi and Alq3 layer. Use of Spiro-TAD as a hole transport material (HTM) and of Spiro-DPVBi as an emitting material (EM) resulted in dramatically improved temp. stability: for the white and blue **OLED** no significant deterioration up to 130.degree. were found. Devices consisting of non spiro components like NPB and/or DPVBi already started to degrade at much lower temps.

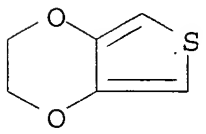
IT **126213-51-2**, Polyethylenedioxythiophene
(white and blue temp. stable and efficient LEDs using amorphous spiro transport and spiro emitting compds. and)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT Electric current-potential relationship
Electric transport properties
Luminescence, **electroluminescence**
(of white and blue temp. stable and efficient LEDs using amorphous spiro transport and spiro emitting compds.)

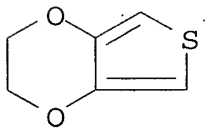
IT **Electroluminescent** devices
(white and blue temp. stable and efficient LEDs using amorphous

spiro transport and spiro emitting compds.)
IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 25233-30-1, Polyaniline 124729-98-2, MTDATA **126213-51-2**, Polyethylenedioxythiophene
(white and blue temp. stable and efficient LEDs using amorphous spiro transport and spiro emitting compds. and)

L32 ANSWER 25 OF 29 HCA COPYRIGHT 2003 ACS on STN
135:172719 Transient **electroluminescence** in **multilayer** organic **light-emitting** diodes: experiment and theory. Book, K.; Nikitenko, V. R.; Bassler, H.; Elschner, A. (Institute of Physical, Macromolecular and Nuclear Chemistry, Philipps University, Marburg, D-35032, Germany). Synthetic Metals, 122(1), 135-139 (English) 2001. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..
AB The authors have studied a **multilayer** org. **light-emitting** diode (**OLED**) with 1,3,5-tris(N,N-bis-(4,5-methoxy-phenyl)-aminophenyl)-benzene (TAPB) acting as hole transporting layer (HTL) and tris(8-hydroxy-quinolinolato) Al (Alq3) as electron transporting layer (ETL). Pos. charge carriers in the HTL were detected optically as a function of the applied bias. Also, the authors studied the DC-characteristics of current and brightness as well as the onset behavior of the **electroluminescence** (**EL**) as a function of the applied bias. An anal. model is developed to describe the obsd. carrier concns. as well as the current-voltage characteristics and the transient **EL** measurements quant.
IT **126213-51-2**, PEDOT
(transient **electroluminescence** in **multilayer** org. **light-emitting** diodes)
RN 126213-51-2 HCA
CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST transient **electroluminescence multilayer** org **light emitting** diode
IT Electric current-potential relationship
Electroluminescent devices
Luminescence, **electroluminescence**

(transient **electroluminescence** in **multilayer** org. **light-emitting** diodes)

IT 2085-33-8, Aluminum Tris(8-hydroxyquinolinato) 50851-57-5
126213-51-2, PEDOT 142894-38-0
(transient **electroluminescence** in **multilayer** org. **light-emitting** diodes)

L32 ANSWER 26 OF 29 HCA COPYRIGHT 2003 ACS on STN
134:319491 Transparent electrically conductive film involving polythiophene layer. Tateno, Katsutaka; Yamada, Hiroyuki (Oji Paper Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001113635 A2 20010424, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-301020 19991022.

AB The film involves a 10-500-nm transparent elec. conductive film on .gtoreq.1 side of a transparent polymer film support and a polythiophene-type transparent elec. conductive polymer layer on the above conductive film. The film, showing good bending resistance and prevention of coloration, is suitable for a liq. crystal **display device**, etc.

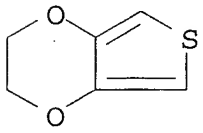
IT **126213-51-2**, 3,4-Polyethylenedioxythiophene
(polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM B32B027-00
ICS B32B007-02; C23C014-06; C23C014-08; H01B005-14

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 75

IT Polyesters, uses
(arom.; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Transparent films
(elec. conductive; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Electric conductors
(films, transparent; polymer substrate-supported **laminate**

of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Vapor deposition process
(ion plating; polymer substrate-supported **laminate** of ion-plated transparent elec. conductor film and polythiophene-type conductive film)

IT Polysulfones, uses
(polyether-, support; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Polyethers, uses
(polysulfone-, support; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Polymers, uses
(polythiophenes; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Heat-resistant materials
Transparent films
(support; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT Polycarbonates, uses
Polyesters, uses
(support; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT 50926-11-9, ITO
(film; polymer substrate-supported **laminate** of ion-plated transparent elec. conductor film and polythiophene-type conductive film)

IT **126213-51-2**, 3,4-Polyethylenedioxythiophene
(polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

IT 9020-73-9, Poly(ethylene naphthalate) 24968-11-4, Poly(ethylene naphthalate) 25038-59-9, PET (polyester), uses
(support; polymer substrate-supported **laminate** of transparent elec. conductor film and polythiophene-type conductive film with bending resistance)

L32 ANSWER 27 OF 29 HCA COPYRIGHT 2003 ACS on STN
134:272953 Surface roughness effects and their influence on the degradation of organic light emitting devices. Jonda, Ch.; Mayer, A. B. R.; Stolz, U.; Elschner, A.; Karbach, A. (Corporate Research and Development, Robert Bosch GmbH, Gerlingen, D-70839, Germany). Journal of Materials Science, 35(22), 5645-5651 (English) 2000. CODEN: JMTSAS. ISSN: 0022-2461. Publisher: Kluwer Academic Publishers.

AB Org. light emitting devices typically consist of one or **several** org. **layers** which are sandwiched between

two electrodes, one of which has to be transparent. In most cases In Sn oxide (ITO) is employed as the transparent, hole-injecting anode material. Usually, the functional org. layers possess a thickness of .apprx.100 nm. For such thin films the homogeneity and the surface roughness are esp. important factors for the device performance. Therefore, the surface roughness of all those layers which are the basis for subsequent deposition processes were systematically studied by at. force microscopy (AFM). For these studies both the ITO substrate and the layers consisting of different org. materials deposited onto the ITO substrate were analyzed. In addn., the two different basic deposition methods for the org. materials, the deposition from soln. by **spin coating** and the deposition by thermal evapn., were compared to one another with respect to their resulting surface roughness. The large surface roughness of the ITO substrate induces layer inhomogeneities, esp. for the vapor deposited org. layers. They can be reduced by the incorporation of a polymeric smoothing layer.

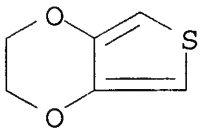
IT **126213-51-2**, Poly(3,4-ethylenedioxythiophene)
(surface roughness effects and influence on degrdn. of org. light emitting devices)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38

IT **Coating** process
(**spin**; surface roughness effects and influence on degrdn. of org. light emitting devices)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 50851-57-5
126213-51-2, Poly(3,4-ethylenedioxythiophene) 128366-35-8
(surface roughness effects and influence on degrdn. of org. light emitting devices)

L32 ANSWER 28 OF 29 HCA COPYRIGHT 2003 ACS on STN
131:293118 Flexible substrates for organic device. Burroughes, Jeremy Henley; Devine, Peter (Cambridge Display Technology Limited, UK). Eur. Pat. Appl. EP 949850 A1 19991013, 10 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP

1999-302512 19990331. PRIORITY: GB 1998-7149 19980402.

AB (substantially) transparent formable and/or flexible component for use as an outer protective element in an electronic or optoelectronic device including .gtoreq.1 elec. active org. layer are described in which the component is a composite structure comprising a layer of glass .ltoreq.200 .mu.m thick and a layer of plastic. Org. devices, esp. org. **light-emitting** devices, are described which employ the protective composites. Methods for fabricating the devices are also described which entail forming the composite and **laminating** it to a device, forming the composite and forming the device on it, or forming the device structure on a plastic layer and then **laminating** the plastic to a glass layer.

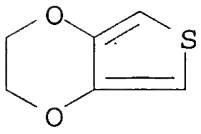
IT **126213-51-2D**, polystyrene sulfonic acid-doped
(glass-plastic composites in flexible substrates for org. devices and the devices and their fabrication)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H05B033-02
ICS H05B033-04; H05B033-10; H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

ST protective composite flexible substrate org device; composite glass plastic substrate flexible org device; **OLED** composite glass plastic substrate; **electroluminescent** device composite glass plastic substrate

IT Electric apparatus
Electroluminescent devices
Semiconductor devices
(org.; glass-plastic composites in flexible substrates for org. devices and the devices and their fabrication)

IT 50926-11-9, Indium tin oxide 96638-49-2, Poly(phenylene vinylene) **126213-51-2D**, polystyrene sulfonic acid-doped 138184-36-8, MEH-PPV
(glass-plastic composites in flexible substrates for org. devices and the devices and their fabrication)

L32 ANSWER 29 OF 29 HCA COPYRIGHT 2003 ACS on STN

131:177292 Advances in Ch-LCD devices using plastic substrates with conducting polymer. Fritz, William J.; Wonderly, H.; Smith, Steven W.; Kim, Y.; Chonko, J.; Doane, J. William; Shashidhar, Ranganathan; O'Ferrall, Catherine Elizabeth; Cuttino, David S. (Liquid Crystal Institute, Kent State Univ., Kent, OH, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3635(Liquid Crystal Materials, Devices, and Applications VII), 114-119 (English) 1999. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Cholesteric liq. crystal display (Ch-LCD) are lightwt., low power, sunlight readable displays. In addn., they can serve a dual function as pen-input device switch no addnl. hardware. Because of the unique properties of this technol., Ch-LCDs can be made with plastic substrates thus making the displayed extremely lightwt., compact and unbreakable. We discuss in this paper recent advances in merging Ch-LCD technol. with conducting polymer electrodes. Conducting polymer provides potential benefits over the use of the std. display electrode materials, indium tin oxide, by improving the reliability of the display. Furthermore, the potential to print the conducting polymer electrodes could significantly increase manufg. vol. and decrease display cost. We report on scaling display size and resoln. by demonstrating a 1/8 VGA Ch-LCD using polypyrrole as the conducting polymer. We fabricated these displays using either a vacuum fill or polymer wall/**lamination** approach and we discus subsequent failure anal. to det. the cause for the line-outs obsd. on these displays. We present initial results in detg. the suitability for using Ch-LCD technol. as a pen-input device. Finally, we discuss initial work towards printing the conducting polymer electrodes to det. the feasibility of printing electrodes on plastic substrates in a roll-to-roll, high vol., low cost process.

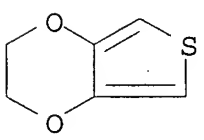
IT **126213-51-2**
(conducting polymer; advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer).

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

IT Conducting polymers
Liquid crystal displays
(advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer)
IT Liquid crystals
(cholesteric; advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer)
IT Polyesters, uses
(substrate; advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer)
IT 30604-81-0, Polypyrrole **126213-51-2**
(conducting polymer; advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer)
IT 25038-59-9, uses
(substrate; advances in cholesteric liq. crystal **display devices** using plastic substrates with conducting polymer)

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FILE 'HCA' ENTERED AT 12:38:44 ON 30 JUL 2003
E OPTICAL IMAGING DEVICES/CV
L36 29420 S E3
L37 4 S L36 AND L10
L38 3 S L37 NOT (L24 OR L32)

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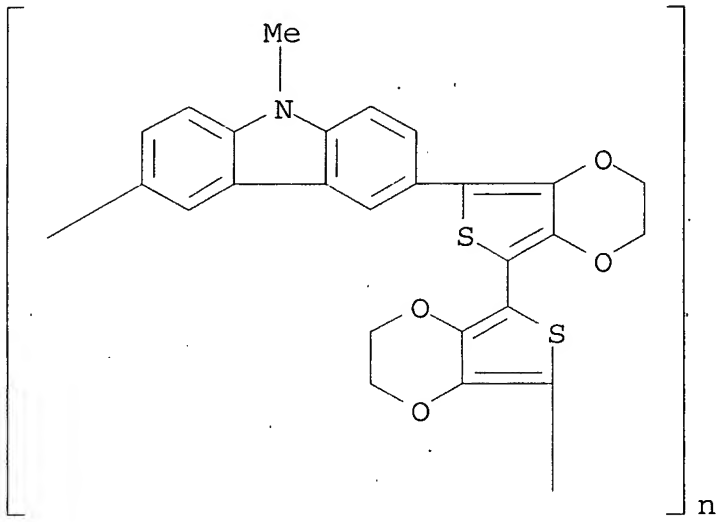
L38 ANSWER 1 OF 3 HCA COPYRIGHT 2003 ACS on STN
138:63944 Electrochromic organic polymer synthesis and devices utilizing electrochromic organic polymers. Xu, Chunye; Taya, Minoru (University of Washington, USA). U.S. Pat. Appl. Publ. US 2002196518 A1 20021226, 29 pp., which which (English). CODEN: USXXCO. APPLICATION: US 2002-180222 20020625. PRIORITY: US 2001-PV300675 20010625; US 2001-PV324205 20010921; US 2002-PV364418 20020314.
AB **Laminated** electrochromic devices are described which comprise a transparent electrode layer; a cathodic polymer (e.g., poly[3,3-dimethyl-3,4-dihydro-2H-thieno[3,4-b][1,4]dioxepine]) layer; an electrolyte layer comprising a solid electrolyte; and a counter electrode layer. An anodic polymer layer (e.g., poly(3,6-bis(2-(3,4-ethylenedioxythiophene))-N-methylcarbazole)) may be formed on the electrolyte layer under the counter electrode. Surface plasmon resonance imaging systems, electrochromic windows, and electrochromic diplays employing the devices are also described. Methods for prepg. the cathodic polymer are described which entail reflux of a toluene soln. of 3,4-dimethoxythiophene and 2,2-dimethyl-1,3-propanediol to produce a monomer precursor. Methods for producing the anodic polymer are also described which

entail first producing intermediates and then reacting the intermediates.

IT **177038-66-3P 255901-53-2P**
(org. polymer electrochromic devices and electrochromic polymer synthesis)

RN 177038-66-3 HCA

CN Poly[(9-methyl-9H-carbazole-3,6-diyl)(2,2',3,3'-tetrahydro[5,5'-bithieno[3,4-b]-1,4-dioxin]-7,7'-diyl)] (9CI) (CA INDEX NAME)

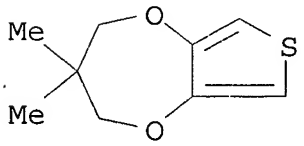


RN 255901-53-2 HCA

CN 2H-Thieno[3,4-b][1,4]dioxepin, 3,4-dihydro-3,3-dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 255901-50-9
CMF C9 H12 O2 S



IC ICM G02F001-03
ICS G02F001-07

NCL 359245000

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 72

IT **Optical imaging devices**
(surface plasmon resonance; using org. polymer electrochromic devices)

IT **177038-66-3P 255901-53-2P**
(org. polymer electrochromic devices and electrochromic polymer synthesis)

L38 ANSWER 2 OF 3 HCA COPYRIGHT 2003 ACS on STN
133:59821 Electroconductive glass **laminate**. Cloots, Tom; Louwet, Frank; Andriessen, Hieronymus; Verlinden, Bart; Tahon, Jean-Pierre; Vermeulen, Leo; Leenders, Luc; Goedeweeck, Rudi (Agfa-Gevaert N.V., Belg.). Eur. Pat. Appl. EP 1013413 A1 20000628, 11 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-204382 19981221.
AB A material is disclosed which comprises a substrate and an org. electroconductive layer provided on said substrate, characterized in that the substrate is a **laminate** comprising a glass layer and a support. The glass layer is preferably a flexible glass layer having a thickness from 10 to 500 .mu.m. The material can be used as an electrode in elec. or semiconductor devices thereby providing an improved lifetime, e.g. Displays, photovoltaic cells or light-emitting diodes.
IC ICM B32B017-10
ICS C03C027-12
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
ST electroconductive glass **laminate** polythiophene
IT Electric conductors
Electroluminescent devices
Optical imaging devices
Photoelectric devices
(electroconductive glass **laminate**)
IT Borosilicate glasses
Glass, uses
(electroconductive glass **laminate**)
IT 25233-34-5P, Poly-thiophene **126213-51-2P**, 3,4-Ethylenedioxy-thiophene homopolymer
(electroconductive glass **laminate**)

L38 ANSWER 3 OF 3 HCA COPYRIGHT 2003 ACS on STN
130:58888 Conductive layer system and use thereof in electroluminescent systems. Huppauff, Martin; Sybrichs, Ralf; Gehrig, Andreas (Robert Bosch Gmbh, Germany). PCT Int. Appl. WO 9854767 A1 19981203, 21 pp. DESIGNATED STATES: W: JP, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1998-DE1467 19980529. PRIORITY: DE 1997-19722946 19970531; DE 1997-19757874 19971224.
AB Transparent or semitransparent conductive layer systems consisting of org. and inorg. elec. conductive materials are described which comprise .gtoreq.2 layers, the first layer contg. an org. or organometallic elec. conductive polymer which is transparent or semitransparent in the visible range of the electromagnetic spectrum while the second contains at least one elec. conductive inorg. compd. or a metal or a metalloid doped accordingly. The layer

systems forms a **multilayer** hybrid electrode for use as a cathode in electroluminescent systems. Use in displays is indicated.

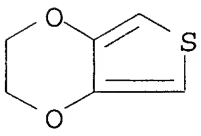
IT **126213-51-2**, 3,4-Polyethylenedioxythiophene
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

RN 126213-51-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



IC ICM H01L051-20
ICS H05B033-28

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76

IT Cathodes
Electric contacts
Electroluminescent devices
Optical imaging devices
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

IT Polyacetylenes, uses
Polyanilines
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

IT Polymers, uses
(polythiophenes; elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

IT Aluminum alloy
Chromium alloy
Copper alloy
Gold alloy
Iron alloy
Palladium alloy
Platinum alloy
Silver alloy
Tin alloy
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-05-3,

Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11099-20-0 25233-30-1, Polyaniline 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 50926-11-9, Indium tin oxide **126213-51-2**, 3,4-Polyethylenedioxythiophene
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11099-20-0 25233-30-1, Polyaniline 25233-34-5, Polythiophene 30604-81-0, Polypyrrole 30604-81-0D, Polypyrrole, derivs. 50926-11-9, Indium tin oxide **126213-51-2**, 3,4-Polyethylenedioxythiophene
(elec. conductive **multilayered** systems including org. and inorg. layers and their use in electroluminescent systems)

=> d his l39-

FILE 'REGISTRY' ENTERED AT 12:51:18 ON 30 JUL 2003
L39 1 S 126213-51-2

FILE 'HCA' ENTERED AT 12:51:47 ON 30 JUL 2003
L40 1148 S L39
L41 10 S L33 NOT L40

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L41 ANSWER 1 OF 10 HCA COPYRIGHT 2003 ACS on STN
139:77169 Design of a screen printable electrode for an organic **light-emitting** device. Carter, Sue A.; Victor, John (Add-Vision, Inc., USA). PCT Int. Appl. WO 2003054981 A1 20030703, 27 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US41353 20021220. PRIORITY: US 2001-PV342579 20011220.

AB The invention relates to the design of a screen printable electrode for an org. **light emitting** device. An **electroluminescent** device consists of a **plurality** of **layers**, where the **plurality** of **layers** includes (i) a bottom electrode layer; (ii) a **light-**

emitting material layer, such that the **light-emitting** material layer is created over the bottom electrode layer; and (iii) a top electrode layer, such that the top electrode layer is printed under atm. conditions over the **light-emitting** material layer.

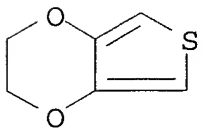
IT **332951-15-2**, 3,4-Ethylenedioxythiophene-styrenesulfonic acid copolymer
(conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

RN 332951-15-2 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-, polymer with ethenylbenzene monosulfo deriv. (9CI) (CA INDEX NAME)

CM 1

CRN 126213-50-1
CMF C6 H6 O2 S



CM 2

CRN 30105-09-0
CMF C8 H8 O3 S
CCI IDS

$H_2C{=}CH{-}Ph$

D1—SO_3H

IC ICM H01L051-20
ICS H01L051-40

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 66, 73, 74

ST screen printable electrode org **light emitting** device

IT Metals, uses
(composite, conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT Conducting polymers
(conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT Bromides, uses
Chlorides, uses

Fluorides, uses
Halides
Iodides, uses
Oxides (inorganic), uses
Polyanilines
Polymers, uses
Salts, uses
Sulfates, uses
(conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT Polymers, uses
(conjugated, **electroluminescent** material; design of a screen printable electrode for an org. **light-emitting** device)

IT Electric contacts
Electrically conductive pastes
Electroluminescent devices
Ink-jet printing
Printing (impact)
Printing (nonimpact)
Screen printing
(design of a screen printable electrode for an org. **light-emitting** device)

IT Films
(elec. conductive; design of a screen printable electrode for an org. **light-emitting** device)

IT Sol-gel processing
(electrode layer contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT Luminescent substances
(**electroluminescent**, films; design of a screen printable electrode for an org. **light-emitting** device)

IT Electric conductors
(films; design of a screen printable electrode for an org. **light-emitting** device)

IT Surfactants
(ionic, electrode layer contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT Esters, uses
(solvent; design of a screen printable electrode for an org. **light-emitting** device)

IT 51-92-3D, Tetramethylammonium, salts 62-53-3D, Phenylamine, salts 66-40-0D, Tetraethylammonium, salts 76-05-1D, Trifluoroacetic acid, salts 104-15-4D, Toluenesulfonic acid, salts 603-34-9, Triphenylamine 1493-13-6D, Trifluoromethylsulfonic acid, salts 7429-90-5D, Aluminum, salts 7439-93-2D, Lithium, salts 7440-02-0, Nickel, uses 7440-09-7D, Potassium, salts 7440-22-4, Silver, uses 7440-23-5D, Sodium, salts 7440-39-3D, Barium, salts 7440-44-0, Carbon, uses 7440-46-2D, Cesium, salts 7440-70-2D, Calcium, salts 10549-76-5D, Tetrabutylammonium, salts 13010-31-6D, Tetrapropylammonium, salts 15477-33-5, Aluminum

chlorate 16872-11-0D, Tetrafluoroboric acid, salts 16940-81-1D, Hexafluorophosphoric acid, salts 25233-30-1, Polyaniline 33906-65-9D, Borate(1-), tetraphenyl-, hydrogen, salts **332951-15-2**, 3,4-Ethylenedioxythiophene-styrenesulfonic acid copolymer
(conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

IT 51-92-3D, Tetramethylammonium, salts 62-53-3D, Phenylamine, salts 66-40-0D, Tetraethylammonium, salts 76-05-1D, Trifluoroacetic acid, salts 104-15-4D, Toluenesulfonic acid, salts 603-34-9, Triphenylamine 1493-13-6D, Trifluoromethylsulfonic acid, salts 7429-90-5D, Aluminum, salts 7439-93-2D, Lithium, salts 7440-02-0, Nickel, uses 7440-09-7D, Potassium, salts 7440-22-4, Silver, uses 7440-23-5D, Sodium, salts 7440-39-3D, Barium, salts 7440-44-0, Carbon, uses 7440-46-2D, Cesium, salts 7440-70-2D, Calcium, salts 10549-76-5D, Tetrabutylammonium, salts 13010-31-6D, Tetrapropylammonium, salts 15477-33-5, Aluminum chlorate 16872-11-0D, Tetrafluoroboric acid, salts 16940-81-1D, Hexafluorophosphoric acid, salts 25233-30-1, Polyaniline 33906-65-9D, Borate(1-), tetraphenyl-, hydrogen, salts **332951-15-2**, 3,4-Ethylenedioxythiophene-styrenesulfonic acid copolymer
(conductive paste contg.; design of a screen printable electrode for an org. **light-emitting** device)

L41 ANSWER 2 OF 10 HCA COPYRIGHT 2003 ACS on STN

139:60536 Transfer material of organic thin-film device and manufacture of organic thin-film device by using the same. Tateishi, Tomomi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003178868 A2 20030627, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-334858 20011031. PRIORITY: JP 2001-305429 20011001.

AB The transfer material consists of a temporary support having thereon .gtoreq.1 org. thin-film layers which are to be transfered to a substrate by **laminating** and heating and/or pressurizing, the surface roughness of the temporal support has the max. height Rmax (JIS B 0601-1982) .ltoreq.50 per 100 of the thickness of the org. thin-film layer, thereby offering good interfacial adhesion between the transfered org. thin-film layer and a device substrate. Preferably, the org. thin-film layer contains at least a luminescent compd. and./or a carrier-transporting compd. In the manuf. of the org. thin-film device, and from the substrate side, a hole-transporting org. thin-film layer, a **luminescent org.** thin-film layer, and an electron-transporting org. thin-film layer are transfered in this order. The substrate may consist of a substrate support having thereon a transparent elec. conductive film.

IT **155090-83-8**, Baytron P
(hole-transporting layer; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

RN 155090-83-8 HCA

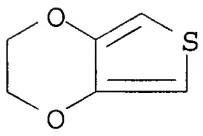
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

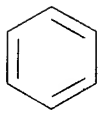


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-10
ICS H05B033-14
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST org thin film device manuf transfer material; transfer film org **electroluminescent** device

IT **Electroluminescent** devices
(manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT Polysulfones, uses
(polyether-, temporal support; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT Polyethers, uses
(polysulfone-, temporal support; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT Polycarbonates, uses
Polyesters, uses
(temporal support; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT 358974-66-0
(electron-transporting layer; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT **155090-83-8**, Baytron P 173394-18-8
(hole-transporting layer; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT 94928-86-6, Tris(2-phenylpyridine)iridium
(luminescent layer; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT 25038-59-9, Lumirror T 60, uses
(temporal support; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

IT 25038-59-9, Lumirror T 60, uses
(temporal support; manuf. of org. **El** device by using transfer material composed of org. thin-film device supported on temporal support)

L41 ANSWER 3 OF 10 HCA COPYRIGHT 2003 ACS on STN
137:330855 Production methods of organic **electroluminescent** devices. Kobe, Emiko (Tdk Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2002324670 A2 20021108, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-126368 20010424.

AB The devices comprise: a lower **laminate** contg. a polymer **electroluminescent** phosphor layer; an upper **laminate** coated using an org. solvent selected from the following: (1) a mol. contg. a C3-6 chain compd. having a C2-3 alkoxy (and carbonyl) group and a C2-3 ester compd., both of which contain OH at an .alpha. and/or a .beta. position; (2) a mol. having a C3-6 chain compd. contg. a C2-4 dialkyl amide group; (3) a C5-8 chain compd. ester; and (4) a C4-7 chain compd. carbonate.

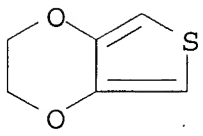
IT **155090-83-8**, Baytron P
(prodn. methods of org. **electroluminescent** devices)
RN 155090-83-8 HCA
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-10

ICS C09K011-06; H05B033-14; H05B033-22
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST polymer org **electroluminescent** device
IT Solvents
(org.; prodn. methods of org. **electroluminescent** devices)
IT Amide group
Carbonyl group
Chemical chains
Electroluminescent devices
Glass substrates
Hydroxyl group
Laminated materials
Phosphors
(prodn. methods of org. **electroluminescent** devices)
IT Polymers, uses
(prodn. methods of org. **electroluminescent** devices)
IT Carbonates, reactions
(prodn. methods of org. **electroluminescent** devices)
IT Esters, reactions
(prodn. methods of org. **electroluminescent** devices)
IT 123-86-4, n-Butyl acetate 2085-33-8, Tris(8-quinolinolato)aluminum 37271-44-6 50926-11-9, ITO **155090-83-8**, Baytron P 188201-14-1 444716-92-1 473799-92-7
(prodn. methods of org. **electroluminescent** devices)

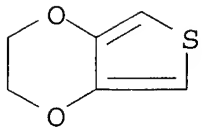
L41 ANSWER 4 OF 10 HCA COPYRIGHT 2003 ACS on STN
137:192553 Organic **electroluminescent** devices using thermoplastic substrates and their manufacture. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002246172 A2 20020830, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-37501 20010214.
AB The org. **EL** device has a thermoplastic substrate having thereon transparent electrodes, .gtoreq.1 org. compd. layers involving luminescent layers, back electrodes, and a thermoplastic sealing which seals the org. compd. layer(s) and shields outside airs and is fused with the thermoplastic substrate around the periphery of the luminescent **laminate** to offer excellent brightness, luminescent efficiency and durability. The device is useful for full color displays, back lights, surface light sources, light source arrays for printers, etc.
IT **155090-83-8**, Baytron P
(hole injection layer; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
RN 155090-83-8 HCA
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

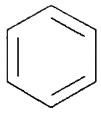


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-04
ICS H05B033-02; H05B033-10; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST org **electroluminescent** device thermoplastic substrate durability; sealing thermoplastic substrate org **electroluminescent** device
IT Fluoropolymers, uses
(Nitoflon, substrate; manuf. of org. **EL** devices using

thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT Polycarbonates, uses
(Panlite, substrate; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT Polyesters, uses
(Tetoron Film, substrate; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT Sealing
(manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT **Electroluminescent** devices
(org.; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT Plastics, uses
(thermoplastics, substrates; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 117944-65-7, Indium zinc oxide
(IZO, transparent electrode; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 7440-22-4, Silver, uses 12614-86-7
(Mg-Ag/Ag **laminate** back electrode; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 1312-43-2, Indium oxide (In2O3)
(Zn-doped In2O3 transparent electrode; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 7440-66-6, Zinc, uses
(dopant, Zn-doped In2O3 transparent electrode; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 358974-66-0, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]
(electron transporting layer; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 15082-28-7, 2-(4-Biphenylyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole 123847-85-8
(electron-transporting material; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT **155090-83-8**, Baytron P
(hole injection layer; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

IT 25067-59-8, Poly(vinylcarbazole)
(hole transporting/host material; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
IT 58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl
(host material; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
IT 58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl
(host material; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

L41 ANSWER 5 OF 10 HCA COPYRIGHT 2003 ACS on STN
137:176899 Macromolecular **electroluminescent** element and its production method. Shimizu, Takao; Iguchi, Mayumi; Sekine, Tokumasa; Minato, Takao (Toppan Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002231444 A2 20020816, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-21186 20010130.
AB The invention refers to a prodn. method of a macromol. **electroluminescent** element, wherein some polymer layers are **laminated** onto an anode substrate comprising a metallic layer to form the first bonding surface, and the remaining polymer layers are formed on a transparent cathode substrate to form the 2nd bonding surface, and two surfaces are bonded together, wherein the 1st bonding surface is treated to have av. surface roughness of 0.05 - 10 .mu.m, in order to prevent outside light reflections and to form an **electroluminescent** element with good bonding.
IC ICM H05B033-10
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** device bonding surface roughness
IT Adhesive bonding
Electroluminescent devices
Surface roughness
(macromol. **electroluminescent** element and prodn. method)
IT 138184-36-8, MEH-PPV **155090-83-8**
(macromol. **electroluminescent** element and prodn. method)

L41 ANSWER 6 OF 10 HCA COPYRIGHT 2003 ACS on STN
137:39135 Method for producing **electroluminescent** element. Kashiwabara, Mitsuhiro (Japan). U.S. Pat. Appl. Publ. US 20020072139 A1 20020613, 24 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-960088 20010921. PRIORITY: JP 2000-289946 20000925; JP 2001-156787 20010525; JP 2001-164212 20010531; JP 2001-169143 20010605.
AB Methods for producing **electroluminescent** elements are described in which .gtoreq.1 org. **electroluminescent** layer constituting the **electroluminescent** element is patterned

by the use of a photolithog. method. **Electroluminescent** elements are also described which comprise .gtoreq.1 patterned org. **electroluminescent** layer, wherein the **electroluminescent** element does not have any one of a partition, a structure aiding patterning, and surface treatment aiding patterning. Preferably, the width of an area with uneven film thickness that is formed at the end of the patterned luminous layer is .ltoreq.15 .mu.m. The devices may comprise **plural** patterned luminous **layers** that can **emit** **light** with different colors, and the distance between the adjacent luminous layers emitting different colors is .ltoreq.30 .mu.m.

IT **155090-83-8**, Baytron P
(org. **electroluminescent** device fabrication using photolithog. patterning of the org. layers and the devices)

RN 155090-83-8 HCA

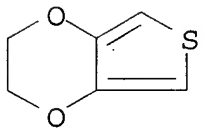
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

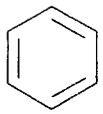


CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS



D1— CH═ CH_2

D1— SO_3H

IC ICM H01L021-00
NCL 438029000
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
ST **electroluminescent** device fabrication photolithog patterning
IT Semiconductor device fabrication
(**electroluminescent** devices; org. **electroluminescent** device fabrication using photolithog. patterning of the org. layers and the devices)
IT Photolithography
(in org. **electroluminescent** device fabrication)
IT **Electroluminescent** devices
(org. **electroluminescent** device fabrication using photolithog. patterning of the org. layers and the devices)
IT 25067-59-8, Polyvinylcarbazole 138184-36-8, MEH-PPV **155090-83-8**, Baytron P
(org. **electroluminescent** device fabrication using photolithog. patterning of the org. layers and the devices)
IT 25067-59-8, Polyvinylcarbazole 138184-36-8, MEH-PPV **155090-83-8**, Baytron P
(org. **electroluminescent** device fabrication using photolithog. patterning of the org. layers and the devices)

L41 ANSWER 7 OF 10 HCA COPYRIGHT 2003 ACS on STN
136:361648 Polymer **electroluminescent** (**EL**) elements with improved mechanical strength. Sekine, Tokumasa; Kai, Teruhiko; Shimizu, Takao (Toppan Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002141174 A2 20020517, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-334255 20001101.
AB The **EL** element has a polymer **light-emitting** layer between 2 electrodes (at least one of which is transparent or translucent), wherein the electrode(s) is formed on a thermoplastic resin adhesive layer.
IT **155090-83-8**, Baytron P
(hole-transporting layer; polymer **EL** elements having

electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)

RN 155090-83-8 HCA

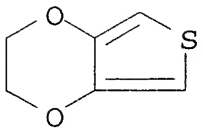
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S

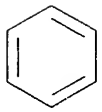


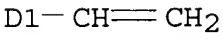
CM 3

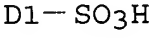
CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS







IC ICM H05B033-26

ICS H05B033-10; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
ST polymer thin film **electroluminescent** element strength; polypropylene adhesive **lamination** aluminum **EL** element; polyphenylenevinylene **light emitting** layer **EL** device
IT Poly(arylenealkenylenes)
(phosphor layer; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT Adhesives
(polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT Plastics, uses
(thermoplastics, adhesive layer; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT **Electroluminescent** devices
(thin-film; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT 9002-88-4D, Polyethylene, acid-modified 9003-07-0D, Polypropylene, acid-modified 24937-78-8, Ethylene-vinyl acetate copolymer 129408-58-8D, Adtex ER 523L, acid-modified 263015-28-7, Admer QE 060
(adhesive layer; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT **155090-83-8**, Baytron P
(hole-transporting layer; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)
IT **155090-83-8**, Baytron P
(hole-transporting layer; polymer **EL** elements having electrodes **laminated** via thermoplastic resin adhesives for improving mech. strength)

L41 ANSWER 8 OF 10 HCA COPYRIGHT 2003 ACS on STN
136:361630 **Electroluminescent** (**EL**) elements sealed with gas- and moisture-barrier **laminates** with improved durability. Arai, Koji; Tsuzuki, Atsuo (Dainippon Printing Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002134271 A2 20020510, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-330031 20001030.
AB The element contg. a 1st electrode, an **EL** layer, and a 2nd electrode, useful for a display, is sealed with a **laminate** of .gtoreq.2 barrier substrates having a base layer and a coating layer, which is preferably formed by PVD or CVD of an inorg. oxide. The **laminate** may have a water absorbent-contg. adhesive

layer between the substrate.

IT **155090-83-8**, Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (Baytron PTP AI 4083, electrode; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)

RN 155090-83-8 HCA

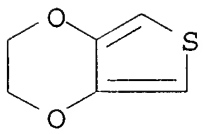
CN Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 126213-51-2
CMF (C6 H6 O2 S)x
CCI PMS

CM 2

CRN 126213-50-1
CMF C6 H6 O2 S



CM 3

CRN 50851-57-5
CMF (C8 H8 O3 S)x
CCI PMS

CM 4

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

D1— CH═ CH_2

D1— SO_3H

IC ICM H05B033-04
ICS H05B033-10; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
ST **electroluminescent** element durability gas barrier **laminate**; silica deposition PET **laminate** sealing **EL**; org **EL** display barrier **laminate** sealant
IT Polyesters, uses
(arom., barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Oxides (inorganic), uses
(barrier coat layer; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Fluoropolymers, uses
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyimides, uses
Polyoxymethylenes, uses
Polysiloxanes, uses
Polysulfones, uses
Polythiophenylenes
Polyurethanes, uses
(barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Polyolefins
(cyclic, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT **Electroluminescent** devices
(durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Acetals
(polyacetals, nonpolymeric, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier

laminates)
IT Polyimides, uses
(polyamide-, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Polysulfones, uses
(polyether-, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Polyamides, uses
(polyimide-, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT Polyethers, uses
(polysulfone-, barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT **155090-83-8**, Benzenesulfonic acid, ethenyl-, homopolymer, compd. with 2,3-dihydrothieno[3,4-b]-1,4-dioxin homopolymer
(Baytron PTP AI 4083, electrode; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT 418755-56-3P, 2,7-Bis(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-9,9-dihexylfluorene-2,7-dibromo-9,9-dioctylfluorene copolymer
(**EL** layer; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT 75-01-4D, Vinyl chloride, polymers 79-10-7D, Acrylic acid, polymers 79-41-4D, Methacrylic acid, polymers 100-42-5D, Styrene, polymers 9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9, ABS resin 9004-34-6D, Cellulose, derivs. 25038-59-9, Poly(ethylene terephthalate), uses
(barrier **laminate**; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses
(electrode; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT 123863-97-8P, 9,9-Dihexylfluorene 189367-54-2P, 2,7-Dibromo-9,9-dihexylfluorene 254755-24-3P, 2,7-Bis(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-9,9-dihexylfluorene
(for polyfluorene deriv. prepn.; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)
IT 86-73-7, Fluorene 111-25-1, n-Hexyl bromide 61676-62-8, 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane
(for polyfluorene deriv. prepn.; durable **EL** elements sealed with gas- and moisture-barrier **laminates**)

L41 ANSWER 9 OF 10 HCA COPYRIGHT 2003 ACS on STN
135:264430 Chemically amplified soft lithography of a low band gap polymer. Yu, Jianfei; Holdcroft, Steven (Department of Chemistry, Simon Fraser University, Burnaby, BC, V5A 1S6, Can.). Chemical Communications (Cambridge, United Kingdom) (14), 1274-1275 (English) **2001**. CODEN: CHCOFS. ISSN: 1359-7345. Publisher: Royal Society of Chemistry.

AB A solid state, acid-catalyzed reaction leading to chem. amplified soft lithog. is demonstrated with a low band gap conjugated polymer; poly({3-[11-(tetrahydropyran-2-yloxy)undecyl]-2,5-thiophenediyl}-3,4-ethylenedioxy-2,5-thiophenediyl). Chem. amplified soft lithog. is a non-photolithog. method that circumvents photochem. damage. Films are formed prior to patterning which may allow for further control of film thickness, morphol. and adhesion over other deposition methods. Since the patterned polymer is rendered insol., it is possible to deposit **multiple layers** of similar or dissimilar conjugated polymers. Evaluation of patterned films in field effect transistors, **light-emitting** and electrochromic devices is in progress.

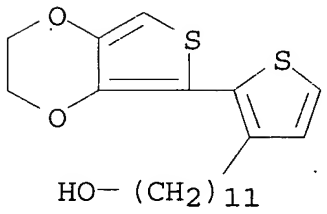
IT **361432-87-3**
(acid-catalyzed elimination of dihydropyran from low band-gap conjugated thiophene polymer)

RN 361432-87-3 HCA

CN 3-Thiopheneundecanol, 2-(2,3-dihydrothieno[3,4-b]-1,4-dioxin-5-yl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 361432-86-2
CMF C21 H30 O3 S2



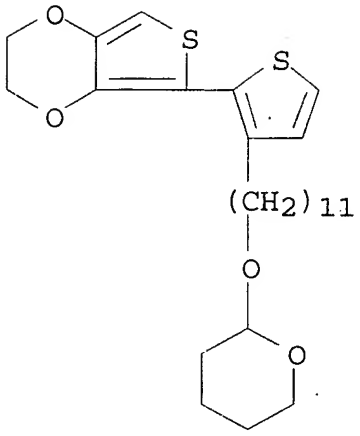
IT **361432-85-1P**
(chem. amplified soft lithog. of low band-gap thiophene polymer)

RN 361432-85-1 HCA

CN Thieno[3,4-b]-1,4-dioxin, 2,3-dihydro-5-[3-[11-[(tetrahydro-2H-pyran-2-yl)oxy]undecyl]-2-thienyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 361432-84-0
CMF C26 H38 O4 S2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

IT 110-87-2 **361432-87-3**
(acid-catalyzed elimination of dihydropyran from low band-gap conjugated thiophene polymer)

IT **361432-85-1P**
(chem. amplified soft lithog. of low band-gap thiophene polymer)

L41 ANSWER 10 OF 10 HCA COPYRIGHT 2003 ACS on STN

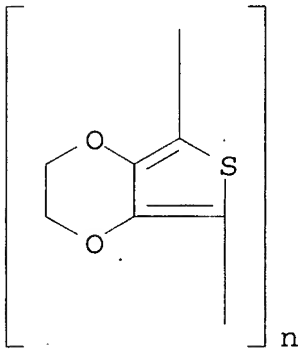
135:242592 Optical and electrochemical properties of soluble N-hexylcarbazole-co-3,4-ethylenedioxythiophene copolymers. Beouch, L.; Tran Van, F.; Stephan, O.; Vial, J. C.; Chevrot, C. (Equipe Reactivite aux Interfaces (EA 2528), Laboratoire sur les Polymeres et les Materiaux Electroactifs, Universite de Cergy Pontoise, Cergy Pontoise, 95013, Fr.). Synthetic Metals, 122(2), 351-358 (English) **2001**. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..

AB Sol. N-hexylcarbazole-co-3,4-ethylenedioxythiophene (HCz-co-EDOT) copolymers from mixts. in various ratio of the two corresponding dihalogenated monomers were synthesized. The random copolymers were obtained from EDOT/HCz starting molar ratio: 0.25, 1, 4, named, resp., C1, C2 and C3, and compared their properties to the two homopolymers synthesized in the same way. The IR studies clearly indicated, that an increase in the amt. of ethylenedioxythiophene in the feed compn. leads to an increase of the proportion of the corresponding comonomer in the final materials. Elemental anal. point out that the reactivity of dibrominated EDOT seems slightly lower than that of dibrominated HCz. Thin films of copolymer have been prepd. and their electrochem. response have been investigated. Absorption and luminescence of these materials have been also studied in CHCl3. Copolymers mainly composed of one monomer (C1 and C3) behaves like the corresponding homopolymers. On an other hand, copolymer (C2) obtained from an equimolar amt. of each monomer in the feed compn. clearly exhibits distinct signals in optical spectra

and in electrochem. behavior, probably due to the presence of each monomer unit short segments . The use of C2 has been explored for possible application in **light emitting** devices indicating that the p-doping of the material would be facilitated leading to an improved hole injecting when compared to carbazole homopolymer. It could be particularly interesting as a hole transporting layer in **multilayer** org. **light emitting** devices.

IT **163359-60-2P 350037-71-7P 359829-16-6P**
(optical and electrochem. properties of sol. N-hexylcarbazole-co-3,4-ethylenedioxythiophene copolymers)

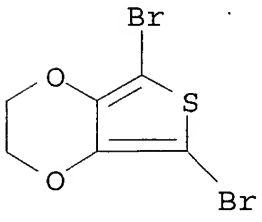
RN 163359-60-2 HCA
CN Poly(2,3-dihydrothieno[3,4-b]-1,4-dioxin-5,7-diyl) (9CI) (CA INDEX NAME)



RN 350037-71-7 HCA
CN Thieno[3,4-b]-1,4-dioxin, 5,7-dibromo-2,3-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

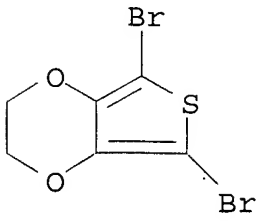
CRN 174508-31-7
CMF C6 H4 Br2 O2 S



RN 359829-16-6 HCA
CN 9H-Carbazole, 3,6-dibromo-9-hexyl-, polymer with 5,7-dibromo-2,3-dihydrothieno[3,4-b]-1,4-dioxin (9CI) (CA INDEX NAME)

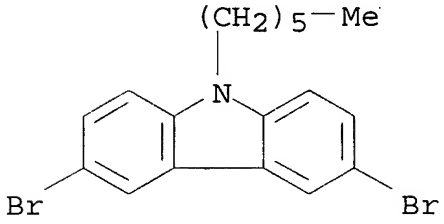
CM 1

CRN 174508-31-7
CMF C6 H4 Br2 O2 S



CM 2

CRN 150623-72-6
CMF C18 H19 Br2 N



CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 73, 76
IT Absorption spectra
Cyclic voltammetry
Fluorescence
Hole transport
Luminescence
Luminescence, **electroluminescence**
(optical and electrochem. properties of sol. N-hexylcarbazole-co-3,4-ethylenedioxythiophene copolymers)
IT **163359-60-2P 350037-71-7P** 359829-15-5P **359829-16-6P** 359829-17-7P, Poly(9-hexyl-9H-carbazole-3,6-diyl)
(optical and electrochem. properties of sol. N-hexylcarbazole-co-3,4-ethylenedioxythiophene copolymers)